County Borough of Ipswich.

ANNUAL REPORT

OF THE

Medical Officer of Health

AND THE

School Medical Officer

For the Year 1909.

BY

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ETC., ETC.

ORDERED BY THE SANITARY AUTHORITY TO BE PRINTED,
March 31*st*, 1910.

IPSWICH:
GEO. WATSON, PRINTER, WESTGATE STREET.

March 31*st*, 1910.

Gentlemen,

I have the honour to present to you the Annual Report on the Health of the Borough for the year 1909, along with which is included the Second Report on the Medical Inspection of School Children.

I desire to express my indebtedness to the Members of the Public Health Committee, and the Education Committee for the unvarying support they have accorded me during the year.

I also beg to thank the Members of the staff of the Public Health Department, and the Education Authority for the valuable assistance they have rendered me.

I remain, Gentlemen,
Your obedient servant,
A. M. N. PRINGLE,
Medical Officer of Health.

INDEX.

Summary of Vital Statistics for the year 1909 6
Population 6
Births 9
Marriages 11
Deaths 11
  General Facts and Comparative Rates 12
  Quarterly Distribution 14
  Age Distribution 15
  Distribution throughout the Borough 16
  Summary of the Principal Causes of Death 17
  Deaths from Respiratory Diseases 18
  Deaths from Cancer 20
  Deaths from Zymotic Diseases 24
  Deaths from Tuberculous Diseases 26
  Control of Tuberculosis 30
  Infantile Deaths 37
Zymotic Diseases—General View 45
  Scarlet Fever 46
  Diphtheria 48
  Enteric Fever 51
  Puerperal Fever 57
  Small Pox 57
  Erysipelas 57
  Measles 58
  Whooping Cough 58
  Diarrhœa 58

Special Departments of the Public Health Department

  Borough Isolation Hospital 59
  Municipal Laboratory 60
  Port Sanitary Authority 60
  Factories and Workshops 62

Miscellaneous and Appendices

Water Supply .. 65
Housing and Town Planning Act .. 66
Midwives Act .. 67
Meteorological Table .. 68
Comparative View of the Birth-rates, Death-Rates and Analysis of Mortality during 1909 in England and Wales, and 76 Great Towns of England and Wales 69
Comparative View of certain Vital Statistics as between Ipswich and 25 other similar Towns .. 70
Local Government Board Tables I. to V. .. 71-76
Report of the Sanitary Inspector .. 78
Report of the Scavenging Department .. 84
Report to the Education Committee on the Medical Inspection of School Children .. 86
Mode of Inspection .. 87
Numbers Inspected .. 88
Number Normal and Number Defective .. 89
Heights .. 90-91
Weights .. 92
Nutrition .. 93-95
Teeth .. 96
Glandular Enlargements .. 97
Hearing .. 97
Speech .. 98
Eyesight .. 98
Tonsils and Adenoids .. 102
Mental Condition .. 104
Diseases of Special Systems .. 104
Tuberculous Diseases .. 104
Deformities .. 105
Skin Diseases .. 105
Exclusions .. 108
School Nurse .. 108
Ventilation of Schools .. 109

SUMMARY OF THE VITAL STATISTICS DURING THE YEAR 1909.

Population of the Borough, estimated to the middle of the year	74,889
Area of the Borough in Acres	8,336
Density of the Population—Persons per Acre	8·9
Marriages—Number 594; Marriage-rate per 1,000 living	15·8
Births—Number 1,792; Birth-rate per 1,000 living	23·9
Deaths—Number 991; Death-rate per 1,000 living	13·2
Number of deaths of infants under 1 year	162
Infantile death-rate; deaths per 1,000 births	89
Zymotic death-rate per 1,000 living (7 principal Zymotic diseases)	0·84
Phthisis death-rate per 1,000 living	1·12
Death-rate per 1,000 living from other forms of Tuberculous disease	0·53
Respiratory death-rate per 1,000 living	1·97
Cancer death-rate per 1,000 living	1·316

POPULATION.

The Registrar General estimates the population of the Borough to have been 74,889 at the middle of 1909, and this figure forms the basis of the whole of the statistics for the year.

The estimation of the population of a district at any year during an intercensal period is based on the assumption that the rate of increase which prevailed during the previous intercensal period will be maintained during the subsequent period.

The following Table exhibits the increase which has taken place in the numbers of the population of the Borough, and in the numbers of houses in the Borough since 1801.

Census Year.	Population.		Inhabited Houses.		No. of Persons. Per House.
	Number.	Decennial Rate of Increase.	Number.	Decennial Rate of Increase.	
1801	11,277		2,170		5·2
1811	13,670	2,393	2,733	663	5·0
1821	17,186	3,516	3,264	531	5·2
1831	20,201	3,015	4,116	852	4·9
1841	25,384	5,183	5,240	1,124	4·8
1851	32,914	7,530	6,979	1,739	4·7
1861	37,950	5,036	8,272	1,293	4·6
1871	42,839	4,889	9,306	1,034	4·6
1881	50,320	7,481	10,812	1,506	4·6
1891	57,081	6,761	12,307	1,495	4·6
1901	66,630	9,549	14,518	2,211	4·6

It is extremely doubtful whether the estimated population for 1909 is correct. Probably the population is over estimated. Unless, however, the error is considerable the consequent statistical vitiation may be disregarded.

DISTRIBUTION OF THE POPULATION OF THE BOROUGH.

On the basis of an estimated population of 74,889, the following would be the distribution of the population in the various Wards of the Borough. The population of the Middle Ward is undoubtedly considerably nnderstated.

Ward.	Estimated Population at the Middle of the Year.
St. Margaret's	19,751
St. Clement's	15,573
Middle	7,667
Bridge	14,025
Westgate	17,873
Whole Borough—Total ...	74,889

AGE AND SEX DISTRIBUTION OF THE POPULATION OF THE BOROUGH.

The following Table exhibits the age and sex distribution of the Population. Particular features of interest are the large excess of Females, and the high proportion of lives over 70 years of age

Females constitute 52·9% of the total population as compared with 47·1% for Males.

3·2% of the population are over 70 years of age. Of this group 43·1% are Males, whilst 56·9% are Females.

Age Periods.	Males.	Females.	Total.
Under 1 year	796	807	1,603
Under 2 years	866	689	1,555
Under 3 years	733	791	1,524
Under 4 years	874	843	1,717
Under 5 years	779	787	1,566
Total under 5 years	4,048	3,917	7,965
Under 10 years	3,668	3,745	7,413
Under 15 years	3,634	4,066	7,700
Under 20 years	3,697	4,115	7,812
Under 30 years	6,382	7,159	13,541
Under 40 years	4,798	5,887	10,685
Under 50 years	3,889	4,267	8,156
Under 60 years	2,593	3,060	5,653
Under 70 years	1,495	2,035	3,530
Over 70 years	1,048	1,386	2,434
Total All Ages	35,252	39,637	74,889

Thus at all ages save under 5 years, the Female population exceeds the Male, the total excess of Females being 4,385.

The estimated increase of the population during 1909 was 1,037.

The excess of births over deaths, or, in other words, the natural increase of the population was 801. If therefore the estimated population was correct, the excess of immigrants over emigrants must have been 236.

The following table is inserted in order to show the natural increase of the population since 1901.

Year.	Excess of Births over Deaths.
1901	716
1902	924
1903	903
1904	841
1905	918
1906	835
1907	760
1908	749
1909	801
Total	7,447

Average annual rate of natural increase, 827,

BIRTHS.

1792 births were registered during 1909. The birth-rate was thus equal to 23·9 per 1,000 living, the lowest rate ever recorded in the history of the Borough.

It would appear that the decline in the birth-rate in the Borough began about 1881. For the first few years the rate of fall was comparatively slow, but during the last few years the fall has been apparently relatively rapid. It is more than probable that a part of the rapidity of the fall in recent years is due to the fact that the population is over-estimated, and thus the birth-rate is proportionately lower.

The following Table is inserted in order to illustrate the behaviour of the birth-rate since 1870 :—

	Birth-rates.	
1870-1874	33·6	Quinquennial Averages.
1875-1879	34·5	
1880-1884	32·9	
1885-1889	31·0	
1890-1894	29·6	
1895-1899	29·5	
1900	28·3	Annual Rates.
1901	28·5	
1902	27·4	
1903	28·4	
1904	27·5	
1905	27·6	
1906	26·5	
1907	25·4	
1908	24·4	
1909	23·9	

It is to be noted that the birth-rates given from 1870 to 1901 are true birth-rates in respect of the fact that the population in each year is known. Since 1901, the rates are derived from estimated populations, the accuracy of which becomes more and more doubtful the further they are removed from a census year.

In the following Table the births are distributed according to sex and legitimacy, and are referred to the Wards of the Borough in which they occurred.

Wards.	Legitimate.			Illegitimate.			Total of Legitimate and Illegitimate.			Birth-rate per 1000 living.	Per centage of Illegitimate Births.
	M	F	T	M	F	T	M	F	T		
St. Margaret's	216	200	416	17	13	30	233	213	446	22·5	6·6
St. Clement's	158	190	348	10	9	19	168	199	367	23·5	5·1
Middle ..	117	112	229	3	5	8	120	117	237	30·9	3·3
Bridge ..	156	146	302	7	6	13	163	152	315	22·4	4·1
Westgate ..	200	203	403	9	15	24	209	218	427	23·8	5·6
Whole Borough	847	851	1698	46	48	94	893	899	1792	23·9	5·2

The birth-rate was thus highest in the Middle Ward and lowest in the Bridge Ward. With respect to the Middle Ward the under-estimation of the population would, of course, increase the birth-rate.

The number of illegitimate births was a little lower than in previous years, the figures being—96, 116, and 102 in the three immediately preceding years. The percentage of illegitimacy compares with 5·3 %, 6·6 %, and 5·3 % in the three preceding years.

It is to be noted that the male and female births were practically equal in number during 1909. This is not the usual rule, the male births being almost invariably in excess of the females.

The following Table exhibits the quarterly distribution of the births :—

March.		June.		September.		December.		Whole Year.	
No. Births	Rate	No.	Rate	No.	Rate	No.	Rate	No.	Rate
426	22·7	482	25·7	458	24·4	426	22·7	1792	23·9

The Notification of Births Act is now in force in the Borough. During the year 1675 births were notified within 36 hours. Thus 93·4 % of the births registered were notified. This is a satisfactory figure. It has been achieved partly by the loyal co-operation of the medical profession, partly by the control exercised by the Local Authority over midwives, and partly owing to the fact that the voluntary system in existence before the passing of the Act enabled the Local Authority to acquaint the public with the fact that the Notification Act would be adopted and its provisions enforced.

No proceedings were taken under the Act, though cautions were issued in three cases.

The total number of still births coming to the notice of the Local Authority was 64. Of these 31 occurred in the practice of medical men, and 33 in the practice of midwives. Thus still births occurred in 3·5 % of the cases attended by midwives, and in 3·4 % of the cases attended by medical men.

MARRIAGES.

594 marriages were registered during the year, as compared with 498 in the previous year. The marriages may be classified as follows :

Church of England	339
All others	255
Total	594

The marriage-rate was thus equal to an annual rate of 15·8 per 1000 living, as compared with 13·4, 14·5, and 13·6 in the three preceding years.

DEATHS.

During the year 1909, 1032 deaths were registered as occurring in the Borough. From this number have to be deducted the deaths of 44 individuals who were not inhibitants of the Borough. The nett number of deaths of inhabitants of the Borough was thus 988. To this number have to be added the deaths of three individuals who died in institutions outside the Borough, but who were inhabitants of the Borough. The total number of deaths of inhabitants of the Borough was thus 991. This number is one of the lowest recorded in the history of the Borough, and has only been surpassed on six previous occasions within the last 40 years, viz., 981 in 1870, 953 in 1873, 886 in 1881, 964 in 1887, 967 in 1894, and 972 in 1902.

In the following Table are set forth the standard death-rate, the crude death-rate, the nett death-rate, the corrected death-rate, and the comparative mortality figure :—

Standard Death-rate.	Crude Death-rate.	Nett Death-rate.	Corrected Death-rate.	Comparative Mortality Figure.
18·63	13·8	13·2	12·8	910

The standard death-rate is an empirical ratio calculated on the hypothesis that the deaths at each age-period were at the same rate as in England and Wales during the decennium 1891-1901.

The crude death-rate is the proportion of deaths per 1000 living, including non-residents.

The nett death-rate is the proportion of deaths per 1000 living of inhabitants of the Borough only, non-residents being excluded. It is the true death-rate of the Borough.

The corrected death-rate is the death-rate per 1000 living, corrected for age and sex distribution so as to be comparable with the death-rate obtaining for England and Wales as a whole.

The comparative mortality figure is obtained by comparing the death-rate of the Borough with that for England and Wales taken as 1000. In other words the number of people that gave 1000 deaths in England and Wales gave, in Ipswich, 910 deaths.

The nett death-rate for 1909 is the lowest of which there is any record in the history of the Borough. In order to prove this point I append the following :—

Comparison of the Death-rates since 1840.

The figures for the years 1840-1870 are given as the averages of the ten-yearly periods, and are crude death-rates, the deaths of non-residents being included.

The death-rates from 1870-1895 are given as quinquennial averages and are also crude death rates, no deductions having been made for the deaths of non-residents.

The figures for the succeeding years are nett death-rates, and are therefore the true death-rates during these years.

Year.	Death-rates per 1000 living.	
1841-1850	23	Decennial Average Death-rates (Crude).
1851-1860	22	
1861-1870	22	
1871-1875	22·8	Quinquennial Average Death-rates (Crude).
1876-1880	22·4	
1881-1885	19·1	
1886-1890	18·5	
1891-1895	19·4	
1896	17·0	Annual Death-rates (Nett).
1897	16·7	
1898	16·4	
1899	18·5	
1900	18·6	
1901	17·8	
1902	14·2	
1903	15·3	
1904	15·5	
1905	14·6	
1906	14·9	
1907	14·9	
1908	14·3	
1909	13·2	

This Table indicates in the clearest and most unmistakeable manner that since the passing of the Public Health Act of 1875 there has been an enormous improvement in the public health of the Borough. In the quinquennium 1871-1875 the death-rate equalled an average of 22·8 per 1000 living. If the death-rate in 1909 had been at the same rate as that prevailing during that quinquennial period the number of deaths occurring during 1909 would have been no fewer than 1709, or 718 in excess of the number actually registered. It is to be noted that on the whole the fall in the death-rate has been fairly progressive since 1880, and that during the last five years it has never exceeded 15 per 1000. Whilst many causes have played their part in bringing about the fall in the death-rate, there can be no question but that the powers conferred on the Local Authority by the Act of 1875 and the subsequent Public Health Enactments have played a prominent part in producing the result.

In view of the steady fall in the birth-rate, the low rate of mortality of recent years is of vital national importance, since, however disastrous to the national welfare the low birth-rate may be, the loss to the community is at the present time to a large extent made up by the smaller number of people who die. The nett result is that the population is increasing, although possibly at a less rapid rate than in previous years.

It is often stated that the effects of sanitary progress are associated with a great evil, viz., that many unfit, who under less favourable conditions would succumb in infancy, are now, on account of the favourable conditions by which they are surrounded, enabled to survive. This is a surprising fallacy. It is still the unfit who die in infancy, whilst the improved conditions of life are all in favour of those who survive. It must never be forgotten that the vast majority of infants are born healthy, even those born under unsatisfactory conditions. It therefore follows that the more the conditions of life are improved, the greater will be the advantage to the physique of the population. Diminished liability to death, as exhibited by the death returns, simply expresses diminished liability to sickness, or, in other words, increased healthiness of the people. Increased health means better and improved physique. It is therefore the duty of the Sanitary Authority to pursue even more strenuously than before the improvements of the sanitary conditions of the people, particularly with reference to housing. The reward of past efforts is written in the records of the past and is full of encouragement. The Local Authority must not rest content with what has already been accomplished, but must regard past results as but an incentive to further efforts. There is, of course, a limit to the lowering of the death-rate, but it is yet far off.

A very considerable proportion of the deaths are still due to preventable conditions, and the ideal to be aimed at is the disappearance of preventable causes of death.

QUARTERLY DISTRIBUTION OF THE DEATHS DURING THE YEAR.

The following Table exhibits (1) The Quarterly distribution of the deaths during the year, (2) The corresponding death-rates, and (3) The corresponding figures for the two previous quinquennia :—

Years.	March.		June.		September.		December.		Whole Year.	
Quinquennia	No. of Deaths	Death-Rates.	No. of Deaths.	Death-Rates.	No. of Deaths.	Death-Rates.	No. of Deaths.	Death-Rates.	No. of Deaths.	Death-Rates.
1899-1903	311	18·6	248	14·8	285	17·2	282	16·6	1127	16·8
1904-1908	314	17·5	248	13·6	244	13·6	265	14·7	1069	14·8
1909	295	15·7	220	11·6	187	9·9	289	15·3	991	13·2

The death-rates during each quarter of the year 1909 thus compare favourably with previous years. The death-rate during the September quarter was by far the lowest ever recorded in the Borough during any quarter of the year. The death-rate during the June quarter was also the lowest ever recorded in that quarter of the year. It is therefore evident that the whole year exhibited exceptionally favourable conditions.

The following table shows the age distribution of the deaths occurring during 1909. Particular features of interest are the extraordinary lowness of the Infantile death-rates during the September and June quarters of the year. These figures are far below anything previously recorded.

The death-rates for the March quarter show the usual high mortality amongst the very old and the very young.

In the December quarter the mortality was high at all ages under 5 years. It was also high in the case of persons over 70, but not so high as in the case of the March quarter.

Death-rates per 1,000 living at each age period during 1909.

The death-rate under 1 year is given as a ratio per 1,000 births, the figures for the other periods are ratios per 1,000 living at each age period.

	Under 1 year.	Over 1 year and under 2 years.	Over 2 years and under 3 years.	Over 3 years and under 4 years.	Over 4 years and under 5 years.	**Total under 5 years.**	Over 5 years and under 10 years.	Over 10 years and under 15 years.	Over 15 years and under 20 years.	Over 20 years and under 30 years.	Over 30 years and under 40 years.	Over 40 years and under 50 years.	Over 50 years and under 60 years.	Over 60 years and under 70 years.	Over 70 years.	**All Ages.**
March Quarter ...	112	20·6	10·5	2·3	5·1	**31·6**	2·1	1·5	3·0	2·6	7·4	10·7	25·4	42·0	156·2	15·7
June Quarter ...	82	15·4	10·5	7·0	5 1	**28·1**	3·2	0·5	2·0	5·0	3·3	10·3	12·0	31·7	100·3	11·6
September Quarter	52	23·2	..	11·6	2·5	**19·5**	2 7	..	2·5	3·5	2·2	13·2	21·2	24·9	67·4	9 9
December Quarter	117	69·5	23·6	14·0	7·6	**47·7**	4 8	2·0	1·0	2·3	5·6	13·7	19·1	39·6	108·5	15·3
Whole Year ...	**89**	**32·1**	**11·1**	**8·7**	**5·1**	**31·6**	**3·2**	**1·0**	**2·1**	**3·3**	**4·6**	**12·1**	**19·4**	**34·5**	**108·1**	**13·2**

DISTRIBUTION OF THE DEATHS IN THE BOROUGH.

The following Table shows the distribution of the deaths amongst the various Wards of the Borough, and in Public Institutions :—

Ward.	Male.	Female.	Total.	Death-rates per 1,000 living.
St. Margaret's ...	98	87	185	9·3
St. Clement's ...	77	73	150	9·6
Middle ...	57	65	122	15·9
Bridge ...	86	74	160	11·4
Westgate ...	101	99	200	11·1
Public Institutions ...	100	71	171	2·28
Whole Borough ...	519	469	988	13·19

The death-rate was thus out of all proportion in the Middle Ward as compared with the other districts of the Borough. The explanation undoubtedly lies in the fact that the population of that portion of the Borough is considerably underestimated. Probably it will be found that the populations of the other districts are overestimated, which would account in part for the very low death-rates recorded.

Taken as a whole, however, the death-rates were very satisfactory.

The deaths in Public Institutions were distributed as follows :—

Institution.	Males.	Females.	Total.
Workhouse	58	33	91
St. John's Home ...	—	1	1
East Suffolk Hospital ...	25	18	43
Borough Fever Hospital	3	7	10
Borough Asylum ...	14	12	26
Total ...	100	71	171

Thus 17·9% of all the deaths registered in the Borough occurred in Public Institutions, as compared with 15·7% and 14·6% in 1908 and 1907 respectively

There is thus definite evidence of a tendency to increasing use of Public Institutions on the part of the public.

The principal causes of death in the Workhouse were—Senility 22, Phthisis 14, Heart Diseases 10, Cancer 9, and Apoplexy 7.

These correspond closely with the deaths recorded in the Workhouse in the previous year.

In the case of the Borough Asylum, the chief causes of death were—Heart Diseases 5, General Paralysis 4, and Senility, Phthisis, and Pneumonia 3 each.

In the case of the East Suffolk Hospital the causes of death were, naturally, very variable.

SUMMARY OF THE PRINCIPAL CAUSES OF DEATH.

In the following Table the principal causes of death are summarised and referred to the quarters of the year in which they occurred. The total figures for the years 1907 and 1908 are given for comparison.

Causes of Death.	1909.				Whole Year.	1908.	1907.
	March.	June.	Sept.	Dec.			
Respiratory Diseases	56	25	14	53	148	177	177
Cancer	26	22	25	25	98	81	84
Senility	38	18	8	30	94	76	76
Phthisis	22	27	20	15	84	106	108
Heart Diseases	28	13	19	21	81	82	85
Zymotic Diseases	5	9	13	36	63	76	90
Apoplexy	18	14	11	13	56	51	49
Atrophy, Debility, Marasmus	13	14	2	15	44	43	43
Other Tuberculous Diseases	12	14	8	6	40	41	42
Prematurity	9	5	11	6	31	32	36
Urinary Diseases	6	7	10	7	30	25	34
Accidents	7	4	5	12	28	29	30
Influenza	2	4	2	3	11	23	15
All others	53	43	38	46	180	217	221
Totals	295	219	186	288	988	1059	1090

There was thus a considerable diminution in the number of deaths referred to respiratory diseases, phthisis, and the seven principal zymotic diseases.

There was an increase in the number referred to senility, which is not in itself an unsatisfactory feature of a death return. There was, however, a regrettable increase in the number of deaths referred to cancer.

In other respects the other groups of causes of deaths show but little variation from the two previous years.

It is impossible to refer fully to each of these groups of causes of death separately.

Particular attention will therefore be given to the groups comprising the deaths from respiratory diseases, tuberculous diseases, cancer, and zymotic diseases.

RESPIRATORY DISEASES.

In last year's Annual Report a full account was given of the part played by respiratory diseases in the production of the death-rate of the Borough. It is therefore unnecessary to recapitulate the facts therein set forth.

During 1909 diseases of the respiratory system accounted for 14·9 % of all the deaths registered during the year as compared with 16·7 in 1908, and an average of 14·7 % for the ten years ending 1908.

The respiratory deaths were most numerous in the March quarter; next most numerous in the December quarter, and least numerous in the September quarter. This distribution is exactly in correspondence with previous experience.

The following Table exhibits the mortality from respiratory diseases in Ipswich during each year and each quarter of the year since 1899 :—

Year.	March Quarter.			June Quarter.			September Quarter.			December Quarter.			Whole Year.		
	No. of Deaths.	Death-rate per 1000 living.	Percentage of the Total Quarterly Mortality.	No. of Deaths.	Death-rate per 1000 living.	Percentage of the Total Quarterly Mortality.	No. of Deaths.	Death-rate per 1000 living.	Percentage of the Total Quarterly Mortality.	No. of Deaths.	Death-rate per 1000 living.	Percentage of the Total Quarterly Mortality.	No. of Deaths.	Death-rate per 1000 living.	Percentage of the Total Annual Mortality.
1899	50	3·09	18	40	2·47	16	11	0·68	3	66	4·08	19	167	2·58	13·7
1900	113	6·89	28	41	2·50	15	12	0·73	4	33	2·01	12	199	3·03	16·4
1901	79	4·74	21	37	2·22	13	17	1·02	6	33	1·98	12	166	2·49	14·0
1902	41	2·41	16	32	1·88	12	14	0·82	6	35	2·06	15	122	1·79	12·5
1903	51	2·76	18	25	1·45	12	24	1·39	8	47	2·73	16	147	2·13	14·0
1904	57	3·26	20	30	1·71	13	22	1·26	7	54	3·09	19	163	2·33	15·0
1905	75	4·23	22	36	2·03	14	21	1·18	8	28	1·58	13	160	2·25	15·3
1906	50	2·78	18	44	2·45	16	15	0·83	5	34	1·89	13	143	1·99	13·0
1907	66	3·61	20	40	2·19	15	25	1·37	12	46	2·52	15	177	2·44	16·2
1908	91	4·92	25	30	1·62	13	17	0·92	8	39	2·11	14	177	2·39	16·7
Average 10 years	67·3	3·86	20·6	35·5	2·05	13·9	17·8	1·02	6·7	41·5	2·40	14·8	162	2·34	14·7
1909	56	2·99	19	25	1·33	11	14	0·74	7	53	2·83	18	148	1·97	14·9

It is evident that during 1909 the deaths from respiratory diseases were below the average of the previous 10 years in the first three quarters of the year, and considerably above the average in the last quarter. The total result was that the respiratory death-rate was below the average of the previous ten years.

The following Table shows the age distribution of the deaths from respiratory diseases in each quarter and the whole year 1909 :—

Quarter.	Under 1 year.	1 year and under 5 years.	5 years and under 15 years.	15 years and under 30 years.	30 years and under 40 years.	40 years and under 50 years.	50 years and under 60 years.	60 years and under 70 years.	Over 70 years.	All ages.
March ...	6	3	1	4	4	4	4	9	21	56
June ...	6	4	...	1	1	...	3	4	6	25
September	2	5	...	...	1	1	1	1	3	14
December	16	12	...	...	2	2	4	7	10	53
Whole year	30	24	1	5	8	7	12	21	40	148
Death-rate per 1000 living at each age period	18·7	3 7	0·06	0·23	0·74	0·85	2·12	5·95	16·4	1·97

Thus 36·5 % of the deaths from respiratory diseases were under five years of age, whilst 27·5 % were over 70 years of age. Thus 64 % of all the respiratory deaths occurred at these two age periods. Evidently respiratory diseases were most fatal during the March quarter in the case of persons over 60 years of age, whilst the greatest fatality from respiratory diseases amongst individuals under 5 years of age occurred during the December quarter.

CANCER.

During 1909, 99 deaths were referred to Cancer, as compared with 81, 84, 66 and 68 in the four preceding years. The number of deaths was the highest recorded in the history of the Borough. The Cancer death-rate per 1,000 living was by far the highest ever recorded, being equal to 1·316 per 1,000 living as compared with 1·096, 1·153, 0·919, and 0·960 in the four preceding years.

There is no doubt that Cancer is on the increase in Ipswich. Whether the increase is as great as that indicated by the figures is, however, more than doubtful. There is reason for belief that not a few deaths are now returned as being due to Cancer, which a few years ago would have been returned as from some other cause. Whilst, therefore, there is reason for the belief that Cancer is on the increase, there is also reasonable ground for the view that the increase is not really so considerable as that suggested by the figures.

The question of the increase of Cancer is of such profound importance that it is desirable to ascertain, if possible, in what directions, either in respect of age of incidence of death, or of the part of the body affected, or of sex, the increase is most manifest.

For this purpose I append the following Table, in which are set forth the Quinquennial Average Death-rates per 1,000 living at all ages, of each sex, and of both sexes combined, since 1890 :—

Quinquennial Average Death-rates per 1,000 living.

Years.		Male.		Female.		Both Sexes.
1890-1894	...	·531	...	·858	...	.707
1895-1899	...	·656	...	·841	...	.743
1900-1904	...	·727	...	·948	...	·844
1905-1909	...	·964	...	1·201	...	1·088

It is at once evident that the Cancer death-rate has increased for both sexes, but that the rate of increase is greater for Males than Females. Comparing the figures for the Quinquennial period 1890-1894 with those for the Quinquennial period 1905-1909, the male deaths from Cancer have increased 44 %, the female deaths 28 %, and for both sexes the increase has been 35 %.

The next point for elucidation is the age at which the deaths have occurred.

In the first place there has been no increase in the death-rate under 30 years of age, and there has been practically no variation in the death-rate between 30 and 40 years of age.

The following Table shows the death-rates per 1,000 living in persons over 40 years of age, arranged according to sex and age-periods, and exhibited as Quinquennial averages.

Quinquennial Periods.	40—50 Years.			50—60 Years.			60—70 Years.			Over 70 Years.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1890—1894	·61	1·27	·97	1·87	3·34	2·67	4 03	4·76	4·44	3·00	4·70	3·99
1895—1899	·80	1 21	1·06	1·99	3·16	2·63	4·12	4·42	4·40	5·97	4·40	5·07
1900—1904	·83	1·59	1·23	2 61	2·78	2·70	5 81	5·01	5·35	4·92	6·15	5·64
1905—1909	1·01	1·59	1·31	3·34	3·48	3·41	6·38	6·71	6·50	10·46	9·91	10·13

The facts indicated by this Table are as follows :—

(1) At all ages the female death-rate exceeds the male.

(2) Taken as a whole, the female death-rate has not risen to any great extent in the case of persons under 60 years. In the case of females over 60 years there is a marked increase between 60 and 70 years, and a very marked increase at all ages over 70 years.

In the case of males the increase is very evident at all ages. Between 50 and 60 years there has been a steady rise. Over 70 years of age the rise in the male death-rate is very conspicuous. It is, therefore, quite clear that the rise in the male death-rate has been proportionately greater at all age periods than the female, but that the greatest increase has been in the case of males over 70 years of age. As to the parts of the body affected in the case of females the greatest increase has been in Cancer of the Generative Organs in females over 60. Cancer of the Breast, Intestines, Stomach, Liver and Rectum have also increased; the degree of increase being in the order of the parts named.

In the case of males the greatest increase has been in the case of Cancer of the Stomach. There has also been an increase in Cancer of the Intestines, Liver, and Rectum, in the order given.

The following Table shows the age and sex distribution of the deaths from Cancer during 1909, arranged according to definite age-periods. The death-rates per 1,000 living of each sex at each age-period are also given :—

	No. of Deaths.				Death-rate per 1,000 living.		
	Male.	Female.	Total.		Male.	Female.	Total.
Under 30 years	—	—	—	...	—	—	—
From 30-40 years	1	3	4	...	0·20	0·50	0·37
From 40-50 years	5	7	12	...	1·28	1·63	1·46
From 50-60 years	10	14	24	...	3·85	4·56	4·22
From 60-70 years	13	18	31	...	8·69	8·83	8·77
Over 70 years	12	16	28	...	11·44	11·53	11·48
All Ages	41	58	99	...	1·16	1·46	1·31

The whole of the deaths from Cancer were over 35 years of age.

The Cancer deaths accounted for 15·9 % of all the deaths registered over this age, as compared with 12·5 % for the previous year.

In the following Table the deaths from Cancer are distributed throughout the various Wards of the Borough and in Public Institutions :—

St. Margaret's Ward	23
St. Clement's Ward	12
Middle Ward	15
Bridge Ward	18
Westgate Ward	17
Workhouse	9
Other Public Institutions	5
Total ...	99

The following Table classifies the deaths from Cancer according to sex and the part of the body affected :—

Organ Affected.	Males.	Females.	Total.
Oesophagus ...	3	3	6
Stomach ...	12	7	19
Intestines ...	6	1	7
Rectum ...	4	4	8
Liver	7	7	14
Peritoneum ...	—	1	1
Other Abdominal Cancers	—	3	3
Head and Face ...	2	—	2
Neck and Throat ..	—	3	3
Urinary Organs ...	2	—	2
Generative Organs ...	3	19	22
Thorax	1	—	1
Breast	—	10	10
Parts not specified ...	1	—	1
Total ...	41	58	99

ZYMOTIC DISEASES.

The following Table shows the number of deaths from each of the principal Zymotic Diseases since 1890. The diseases usually included in this group are Smallpox, Scarlet Fever, Diphtheria, Fever (in the case of Ipswich all the deaths under this heading are due to Enteric Fever, the others being non-existant), Measles, Whooping Cough, and Diarrhœa.

Year.	Small-pox.	Scarlet Fever.	Diphtheria.	Fever.	Measles.	Whooping Cough.	Diarrhœa.	Total.
1890	...	1	46	8	81	36	30	202
1891	...	5	20	16	7	5	27	80
1892	...	3	13	7	10	8	33	74
1893	1	8	7	20	43	12	92	183
1894	...	18	22	4	...	42	11	97
1895	...	2	35	11	3	34	122	207
1896	...	4	18	8	50	23	71	174
1897	...	2	8	6	1	21	73	111
1898	...	2	8	7	48	31	127	223
1899	...	5	9	32	2	3	147	198
1900	...	2	9	12	18	16	72	129
1901	...	...	19	14	9	35	70	147
1902	...	2	7	32	...	14	18	73
1903	...	...	11	5	48	12	32	108
1904	...	1	10	7	20	7	79	124
1905	...	3	11	7	12	22	40	95
1906	...	2	9	4	...	6	79	100
1907	...	1	8	3	36	27	15	90
1908	...	1	10	1	15	12	37	76
1909	...	4	8	3	17	15	16	63
Total	1	66	288	207	420	381	1191	2554
Annual Average	·05	3·30	14·40	10·35	21	19·05	59·55	127·7

The following Table shows the Death-rates per 1,000 living from each of the 7 principal Zymotic Diseases in each year since 1890 :—

Year.	Small-pox.	Scarlet Fever.	Diphtheria.	Fever.	Measles.	Whooping Cough.	Diarrhœa.	Total.
1890	...	0·01	0·80	0·14	1·43	0·63	0·53	3·54
1891	...	0·08	0·32	0·28	0·12	0·08	0·47	1·40
1892	...	0·05	0·22	0·12	0·17	0·13	0·56	1·27
1893	0·01	0·13	0·12	0·33	0·72	0·20	1·56	3·10
1894	...	0·34	0·36	0·06	...	0·70	0·18	1·62
1895	...	0·03	0·58	0·18	0·05	0·58	2·00	3·39
1896	...	0·06	0·29	0·12	0·80	0·37	1·14	2·80
1897	...	0·03	0·12	0·09	0·01	0·33	1·00	1·61
1898	...	0·03	0·14	0·10	0·75	0·48	1·99	3·49
1899	...	0·08	0·14	0·49	0·03	0·04	2·27	3·05
1900	...	0·03	0·14	0·18	0·28	0·24	1·09	1·95
1901	...	...	0·27	0·21	0·13	0·53	1·05	2·20
1902	...	0·02	0·13	0·47	...	0·20	0·26	1·07
1903	...	...	0·16	0·08	0·69	0.17	0·46	1·56
1904	...	0·01	0·14	0·10	0·28	0·10	0·13	1·77
1905	...	0·05	0·15	0·09	0·17	0·31	0·56	1·33
1906	...	0·02	0·13	0·05	...	0·08	0·10	1·39
1907	...	0·01	0·10	0·04	0·49	0·37	0·20	1·23
1908	...	0·01	0·13	0·01	0·20	0·16	0·50	1·02
1909	...	0·05	0·10	0·04	0·22	0·20	0·22	0·84
Average Annual Death-rate per 1,000 living :—								
	0·005	0·05	0·22	0·15	0·32	0·29	0·91	1·98

The preceding Tables indicate that the mortality from the Zymotic diseases included in the Tables was, during 1909, considerably lower than in any previous year comprised in the Table. Evidently the greatest improvement has occurred in respect of Diphtheria and Enteric Fever. The improvement in the case of Diphtheria is in my opinion due to the use of Antitoxin, as it is certainly not due to diminished prevalence. In the case of Enteric Fever the improvement is due to diminished prevalence.

There is no evidence of any improvement in the case of Measles.

In the case of Whooping Cough there appears to be some evidence of diminished fatality.

Diarrhœa within the last 10 years has been undoubtedly less prevalent as a fatal disease. Probably the improvement is due to diminished prevalence, and the lessened prevalence is probably in some degree connected with the diminution in the number of Privy Middens, and the consequent improvement in the sanitary conditions of the homes of the people.

There is distinct evidence of lessened mortality from Scarlet Fever. This is probably due to diminished virulence.

TUBERCULOUS DISEASES.

The diseases included in this group may be classified under five headings, viz:—(1) Tuberculous disease of the Lungs. (2) Abdominal Tuberculosis. (3) Cerebral Tuberculosis. (4) General Tuberculosis. (5) Other forms of Tuberculosis.

The following Table gives a general view of the degree of prevalence of the various forms of Tuberculosis in Ipswich since 1890. The figures represent the total number of deaths from each of the groups of Tuberculosis:—

Number of Deaths from	Phthisis.	Abdominal Tuber-culosis.	Cerebral Tuber-culosis	General Tuber-culosis.	All other forms of Tuber-culosis.		Total of all forms of Tuber-culosis.
1890-1909 inclusive	2,018	109	252	212	73	...	2,664
Annual Average	100·9	5·4	12·6	10·6	3·6	...	133
Percentages of the total mortality from Tuberculosis	75·7	4·0	9·3	7·9	2·7		

Thus Phthisis accounts for three-fourths of all the deaths from Tuberculosis.

The following Table shows the death-rates per 1,000 living from Phthisis, both in Ipswich and England and Wales since 1874:—

Tuberculosis of the Lungs.

	IPSWICH.				ENGLAND & WALES.	
Year.	Male.	Female.	Both Sexes Death-rate per 1,000 living.	Quinquennial averages.	Death-rate per 1,000 living	Quinquennial averages.
1874	...	...	2·37	...	2·08	...
1875	...	...	2·88	...	2·20	...
1876	...	...	2·89	...	2·11	...
1877	...	...	2·76	...	2·07	...
1878	...	...	2·70	2·72	2·11	2·11
1879	...	...	2·49	...	2·02	...
1880	...	...	1·97	...	1·86	...
1881	...	...	1·98	...	1·82	...
1882	...	...	2·41	...	1·85	...
1883	...	...	2·32	2·23	1·88	1·88
1884	...	...	1·79	...	1·82	...
1885	...	...	2·14	...	1·77	...
1886	...	...	2·53	...	1·73	...
1887	...	...	1·98	...	1·61	...
1888	...	...	1·74	2·03	1·56	1·69
1889	...	...	1·84	...	1·57	...
1890	1·63	1·92	1·79	...	1·68	...
1891	2·47	1·20	1·84	...	1·57	...
1892	2·43	1·60	1·99	...	1·46	...
1893	2·06	2·14	2·11	1·91	1·46	1·55
1894	1·71	1·52	1·61	...	1·38	...
1895	1·89	1·65	1·77	...	1·39	...
1896	1·52	1·36	1·43	...	1·30	...
1897	1·90	1·52	1·70	...	1·34	...
1898	1·50	1·08	1·28	1·56	1·31	1·34
1899	1·68	1·50	1·59	...	1·33	...
1900	2·31	1·20	1·70	...	1·33	...
1901	1·63	0·90	1·24	...	1·26	...
1902	1·95	1·60	1·76	...	1·23	...
1903	1·73	1·28	1·48	1·55	1·20	1·27
1904	1·86	1·16	1·42	...	1·23	...
1905	1·26	1·25	1·25	...	1·14	...
1906	1·15	1·02	1·08	...	1·15	...
1907	1·75	1·24	1·46	...	1·14	...
1908	1·92	0·99	1·43	1·33	1·11	1·15
1909	1·50	0·78	1·12	...	...	...

It is evident in the first place that the Phthisis death-rate has been constantly higher in Ipswich than in England and Wales as a whole.

In the second place it is evident that the mortality from Phthisis has fallen enormously. In Ipswich, comparing the Quinquennium 1874-1878 with that of 1904-1908, the mortality has fallen 50 %. In England and Wales the fall during the same period has been 45 %.

The greater liability of the male sex is well shown. It is clear that the female mortality has fallen much more rapidly than the male, and that a large proportion of the improvement for both sexes is due to the improvement in the female rate of mortality.

The following Table shows the death-rates per 1,000 living from the various forms of Tuberculosis other than the lungs since 1890. It is evident that these forms of Tuberculosis show no improvement.

Year.	Death-rates.	Quinquennial average.
1890	·44	...
1891	·38	...
1892	·44	...
1893	·44	...
1894	·47	·44
1895	·56	...
1896	·38	...
1897	·46	...
1898	·66	...
1899	·67	·54
1900	·64	...
1901	·62	...
1902	·31	...
1903	·49	...
1904	·44	·50
1905	·44	...
1906	·42	...
1907	·58	...
1908	·56	...
1909	·53	·50

During 1909 the various forms of tuberculous disease in Ipswich accounted for 124 deaths, or 12·5 % of the total mortality from all causes during the year, as compared with 13·8 %, 13·6 %, 10·05 %, 11·5 %, and 12·4 % respectively in the five preceding years. Taken as a whole, tuberculous diseases account for about 12 % of the total mortality from all causes in Ipswich, as compared with about 11 % for England and Wales. Of the 124 deaths from tuberculous diseases, 84 were due to pulmonary tuberculosis, the equivalent of an annual death-rate of 1·12 per 1000 living, which is the lowest rate ever recorded in the Borough except that in the year 1906. Pulmonary tuberculosis thus accounted for 67·7 % of the deaths from all forms or tuberculosis during 1909.

40 deaths were ascribed to the other forms of tuberculosis other than pulmonary tuberculosis, the equivalent of an annual death-rate of 0·53 per 1000 living. Of these deaths 8 were ascribed to abdominal tuberculosis, 14 to cerebral tuberculosis, 14 to general tuberculosis, and 4 to all other forms of tuberculosis. The number of deaths ascribed to abdominal tuberculosis was slightly in excess of the average of recent years, whilst the remainder were distributed in accordance with the average.

The following Table shows the age and sex distribution of the deaths from the various forms of tuberculosis during 1909. The male death-rate from tuberculosis of the lungs is seen to be double that of the female.

Age Period.	Sex.	Under 1 Year.	Under 2 Years.	Under 5 Years.	Under 10 Years.	Under 15 Years.	Under 20 Years.	Under 30 Years.	Under 40 Years.	Under 50 Years.	Under 60 Years.	Over 60 Years.	Total.	Total each disease.	Death-rate per 1000 living each sex.	Death-rate per 1000 living both sexes.
Phthisis ..	M	...	...	...	...	...	1	17	9	17	6	3	53	84	1·50	1·12
	F	...	...	...	2	1	2	7	7	7	3	2	31		0·78	
Abdominal Tubercle	M	...	...	...	...	...	1	...	1	...	1	...	3	8	M. ·63 F. ·42	·53
	F	...	2	1	...	...	...	...	...	...	1	1	5			
Cerebral Tubercle	M	...	1	2	1	1	...	2	1	...	...	...	8	14		
	F	...	4	1	1	...	...	...	...	...	...	...	6			
General Tubercle	M	3	2	...	1	...	1	2	...	...	...	1	10	14		
	F	...	1	1	...	...	1	...	...	...	1	...	4			
All other forms of Tuberculosis	M	...	...	...	...	2	...	...	...	...	...	...	2	4		
	F	...	...	1	...	...	...	1	...	...	...	...	2			
Total all forms of Tuberculous Disease.	M	3	3	2	2	3	3	21	11	17	7	4	76	124	2·13	1·65
	F	...	7	4	3	1	3	8	7	7	5	3	48		1·20	
	T.	3	10	6	5	4	6	29	18	24	12	7	124			

In the following Table the deaths from the various forms of tuberculosis are distributed according to the Wards and Institutions in which they occurred.

Ward.	Pulmonary Tubercle.	Abdominal Tubercle.	Cerebral Tubercle.	General Tubercle.	All other Forms of Tubercle.	Total all Forms of Tubercle.
St. Margaret's ...	17	1	2	1	—	21
St. Clement's ...	13	2	3	2	—	20
Middle ...	5	—	2	1	—	8
Bridge ...	16	1	1	5	—	23
Westgate ...	14	2	4	1	2	23
Workhouse ...	14	—	1	1	1	17
Other Institutions	5	2	1	3	1	12
Totals ...	84	8	14	14	4	124

Thus no less than 16·6 % of all deaths from pulmonary tuberculosis occurred in the Workhouse. This is considerably in excess of the average of recent years, although the number of Workhouse deaths has considerably increased recently.

On January 1st, 1909, the regulations with regard to the Compulsory Notification of Poor Law Phthisis came into force into the Borough.

The following Table gives the number of cases notified and the deaths :—

	Total Notified.		Hospital Cases.				Home Cases.	
			Treated in Workhouse Infirmary.		Mental Hospital.			
	No. Notified.	No. Died.	No. Treated in Hospital.	No. Died in Hospital.	No. Treated.	No. Died.	No. Treated.	No. Died.
Males ...	42	19	25	9	1	...	16	10
Females	23	9	13	5	2	...	8	4
Total	65	28	38	14	3	...	24	14

It is evident that 28 deaths occurred amongst the notified cases, and that the fatal cases were equally numerous both for Institutions and home treatment. We therefore arrive at the position that no less than 33 % of all the deaths registered as due to phthisis during 1909 were of individuals in receipt of Poor Law relief, either at home or in the Workhouse Infirmary.

Excluding the three pauper inmates of the Borough Asylum, there were 62 cases notified during the year. Of these 41 were males. The ages of these males were as follows :—2 were between 10 and 20 years, 29 between 20 and 50, and 10 over 50 years.

21 cases were females. Of these 3 were between 10 and 20 years, 15 between 20 and 50 years, and three over 50 years.

It is evident therefore that the pauperising influence of consumption was far greater in the case of males than females, and that for practical purposes the incidence of the disease fell upon the most valuable portion of the lives of both men and women.

One is compelled to conclude from the histories that have been obtained that Phthisis was the cause of the poverty in the vast majority of cases.

At the present time the Guardians maintain a special annex in connection with one of the women's wards at the Infirmary for the purpose of treating female consumptives. This contains eight beds.

It has recently been decided to provide a similar structure for the treatment of male cases. There can be no question but that this is a wise procedure which will help to solve the difficulty of the pauper consumptive.

During 1909 61% of the cases notified under the the Poor Law Regulations were treated in the Infirmary. With more acccommodation possibly more cases may be treated and possibly with greater individual benefit.

It is not to be expected that treatment in Workhouse Infirmaries can ever show any degree of success, at least under present conditions, for the simple reason that the consumptives are so far gone by the time they come under the jurisdiction of the Poor Law, that all hope of cure must be abandoned. The great uses of such Institutions will always lie in the benefits of isolation of the consumptive in his most infectious state, and also the no less urgent humanitarian aspect of the matter in that it will render it possible for the consumptive to spend his last days under sound hygienic conditions and with a reasonable degree of comfort.

I estimate that the cost of maintenance of the pauper consumptives in the Infirmary during 1909 was at least £430, which came out of the ratepayer's pocket. If the true cost of consumption is to be arrived at, it is necessary to add to this the cost of out-relief granted to patients and their wives and families, and the maintenance of widows and children, partly in institutions under the Poor Law and partly at home. The result would show, if the figures were available, that consumption is costing the ratepayers, not hundreds but thousands of pounds per annum. The true economy here is prevention.

The question of the control of Tuberculosis is one of the most profound importance to the community. In previous annual reports and in several special reports on the subject the matter has received detailed consideration, and it will therefore be unnecessary to do more at the present time than present a brief resumé of the subject.

The ultimate cause of every case of Tuberculosis is the growth in the tissues of a germ which is called the Tubercle Bacillus.

In order to the production of developed Tuberculosis three factors must be present and must be complementary:—

(1) The entrance of the germ into the body.

(2) The germ must be of sufficient virulence.

(3) The individual must be sufficiently susceptible.

Experience has shown that a vast number of people are attacked by the germ who never show any symptoms of the disease at all, who die from some other cause, and the fact that they have been attacked by Tuberculosis is only discovered on Post Mortem examination when evidence of old healed Tuberculosis is discovered.

It is therefore right to assume that the human race is possessed of a high natural antagonism to the disease. Were it not so, in consideration of the innumerable opportunities of infection afforded by the circumstances of daily life, the human race would have been decimated long prior to the present time.

If, therefore, we assume that the vast majority of the human race are exposed at some periods of their live to infection, and that the germ is of sufficent virulence, it is evident that the factor which, in the vast majority of cases, determines the question of natural cure or the establishment of the developed disease, is the susceptibility of the individual.

The question of the control of the disease therefore reduces itself for practical purposes to two procedures:—

(1) The bringing about of a condition of things which will diminish susceptibility.

(2) The prevention of the spread of the disease from individuals suffering from the developed disease to those in a susceptible state.

The conditions which produce susceptibility are many and various. Brief reference may be made to three conditions.

(1) Hereditary tendency. There is little doubt that for all practical purposes Tuberculosis is not directly transmitted from parent to child, but that the transmission consists of a peculiar state of the tissues, rendering them specially prone to attack by the Tubercle Bacillus. If, therefore, such an individual is not exposed to infection he will escape Tuberculosis.

(2) There can be no doubt that one of the great agents in the production of susceptibility is poverty with the whole of its attendant evils. The principal of these evils, from the point of view of Tuberculosis, are insufficient nutrition, and faulty housing. Whilst the causal aspects of poverty are outside the curative influence of a

sanitary authority, the question of housing is one which directly and intimately affects the work of a Public Health Department. It therefore follows that the local authority which desires to carry out its duties so that the community shall enjoy the full benefit of the powers conferred upon it, will direct to the housing of the people that degree of attention which the paramount importance of the subject demands.

The housing conditions to which particular reference will be made in this relation are threefold.

(*a*) Dampness of site. In many of the older houses, the dampness is due to the absence of damp courses, with the result that damp rises in the walls. In other instances the houses are damp because the floor is made of ordinary bricks laid upon sand in direct communication with the subjacent soil. This is a condition of affairs which is directly injurious to health, and is a source of that diminished vitality which is so liable to be followed by Tuberculosis. These are conditions which directly intensify the evils of a damp situation.

(*b*) Insufficient ventilation. This is a condition which beyond all others plays its part in the dissemination of Tuberculosis. It is partly structural and partly adventitious. The structural insufficiency occurs in connection with back to back houses, and houses without through ventilation. In many instances also the windows are not made to open or are so constructed as to open insufficiently. No window should be considered proper if both halves are not made so as to open full extent top and bottom. The result is that free circulation of the air in the house is impossible and a condition of affairs is produced which not only brings about the condition of susceptibility, but affords *the* condition suitable for the spread of the disease should infection be introduced.

Another grossly injurious structural defect is insufficient height of the rooms. As this condition is frequently found in back to back houses it simply helps to aggravate the evils of the other conditions.

In close association with the question of ventilation is the question of overcrowding. In this relation, overcrowding is a purely relative matter, since the number of individuals who may occupy a well-ventilated, though small, house is greater than that which can occupy with safety an equally large house not capable of adequate ventilation. It may be stated that overcrowding is a condition which is universally recognised as a notorious predisposing cause of consumption. The evil effects of overcrowding exhibit themselves in the production of an atmosphere which is notoriously injurious to health, so notoriously so that it is even known to the general public. It is therefore abundantly evident that any house provided with insufficient ventilation becomes, when in occupation, a source of danger, since the atmosphere cannot be changed with sufficient frequency. It is for this reason that back to back houses and houses not provided with through ventilation are now, under the Housing and Town Planning Act, classified as houses, the erection of which must be considered the construction of houses unfit for human habitation. If this view is correct, and (with one exception) it is supported by every Sanitary Authority in the kingdom, how much more injurious must be the old back to back houses, which were built at a time when damp courses were not compulsory, when any kind of floor was considered suitable, and when adequate height of rooms was not insisted upon? If there be added to this the statement that frequently the windows of these houses are not made to open, it appears to me that the conception of a house unfit for human habitation is fulfilled.

(*c*) Want of Sunlight. Without labouring this point it may be stated that no house which does not permit its rooms to receive at some part of the day, the benefit of the direct rays of the sun fulfils the requirements of a healthy habitation. From the point of view of Tuberculosis, direct sunlight is an absolute necessity.

Without going further into the housing question, or the other conditions which have a causal relationship to Tuberculosis, it is necessary to state one essential fact in connection with the spread of Tuberculosis. It is now known that the vast majority of cases of Phthisis take their origin from a pre-existing case of Phthisis. That is to say that Phthisis is an Infectious Disease. The degree of infectivity is however not great, and prolonged and frequent exposure to infection is necessary before infection can be established. Whilst this is true in the main, it is equally true that if the surroundings be unsuitable, infection is not only much more likely to take place, owing to the establishment of sufficient susceptibility, but will also take much less time. I look upon this fact as a probable explanation of the common experience that a consumptive may not infect members of his family until the pauperising influence of the disease has compelled him to seek a more and more unsatisfactory home. It is not unfrequently the case that the victim of Phthisis is housed under reasonable conditions when he first exhibits the developed disease. As he becomes more and more unfit, his earning capacity diminishes. The first thing to go is furniture and clothing, then the rent. The result is a house at a lower rental, lower because it is inferior. As the disease goes on and the earning further diminishes, it means a further move into a house at a still cheaper rental. Each move means the exchange into more and more unsuitable surroundings. The result is damage to the patient and damage to his family, not only on account of the deleterious influence of unhygienic surroundings and insufficient or improper food, but also on account of the increased likelihood of infection of other members of the family.

(3) The third great predisposing cause of Tuberculosis is Alcoholism.

The procedures necessary for the control of Consumption are the same as those necessary for the control of any other Infectious Disease.

They are :—

(1) Compulsory Notification. I consider that an adoptive Act should be passed at the instance of the Local Government Board so that those Local Authorities which desire to adopt this procedure may be enabled to put it in force without going to the prohibitive expense of a Private Act. It is needless to point out that the Penal Clauses of the Notification Act would not apply in the case of Phthisis.

(2) The procedures of Disinfection, &c., are at present carried out on receipt of information of death or otherwise, and notification would simply involve an extension of these steps.

(3) Isolation. In the case of other Infectious Diseases, Isolation is imperative on account of the danger of infection, and to a lesser extent on account of the patient himself. It is, therefore, a Public Health matter first and foremost, and a personal matter in the second degree. In the case of Phthisis, Sanatorium treatment, which involves a degree of isolation, is necessary for the same reasons, but the relative proportions are altered, for the reason that on account of the low degree of infecticity possessed by the disease, and the extreme simplicity of the precautions necessary to prevent its spread, the time spent at the Sanatorium can be utilised equally for the personal factor of treatment and for the Public Health factor of prevention of the spread of the disease.

Sanatorium treatment is, therefore, called for alike in the interests of the patient and in the interests of the Public. It is thus obvious that Sanatorium treatment will, in many cases, be a matter of concern to the Public Health. It will be equally clear that there are many other cases so circumstanced that the question of danger to the Public does not arise.

At the present time the only provision made for Ipswich Consumptives is that provided by the Guardians. Therefore, none of our Consumptives can receive treatment until they are reduced to seeking the aid of the Poor-Law. Then, *when it is too late*, they can get treatment, the sole effect of which, from the personal point of view, may be in some cases to prolong life, but in no case to bring about cure. From the Public Health point of view the provision made by the Guardians is of vital importance, since it provides means of isolation for the advanced cases, which are precisely those which are most infectious, and which live under conditions most likely to conduce to spread. It is, however, a lamentable position that all that is done at the present time is the provision of a home for the dying pauper.

Without quoting figures, I may state that the Phthisis mortality in Ipswich is high. Amongst a number of towns of equal population, and similar industrial conditions, Ipswich occupies one of the worst positions. Considering the natural advantages of the town, this is precisely the opposite of what should be the case.

I am of opinion that Sanatorium provision is urgently required, and, I believe, that the Corporation should take advantage of any Sanatorium provision which may hereafter be made. It is not suggested that the Corporation should provide a Sanatorium, but it is advised that if a Sanatorium is provided, the Corporation should make an annual subsidy of some sufficient sum, which would entitle them to utilise a certain number of beds for the purpose, principally of training patients in the management of their disease and the methods of prevention. I regard this matter as by far the most urgent need at the present time, and, I believe, that the best hope of the eradiction of Tuberculosis lies in the provision of opportunities for the training of cases.

The class of patient for whom the Corporation would provide would be those in the early stages, who would benefit by training, and who would be unable to pay for treatment for themselves.

I would point out that this class of patient must eventually fall upon the Ratepayers. Whilst Sanatorium treatment may not cure such cases, it will, at least, give a chance. The inestimable advantage of the training is this—that the patients are taught how they may *cease to be a source of danger to others*. This is a Public Health procedure of unique and inestimable value, and is one which no Authority with any pretensions to be in accordance with the spirit of the times can afford to neglect.

The remedy for Tuberculosis is not cure but prevention. The history of the past shows that the disease is diminishing. If it can diminish as it has done within the last 40 or 50 years, then by special measures its rate of diminution may be accelerated, and there is ground for the hope that it may ultimately become a comparatively uncommon disease.

If, therefore, Phthisis is ever to be dealt with, it must be by the provision of means of training and cure. The question of training is one of such vital importance to the Public Health that, if the opportunity of utilising it is presented, the Local Authority should at once take advantage of it.

This plan is. already in force in many towns in England and Scotland.

In the majority of these towns the Sanatoria have been provided by private means, and the Municipality retain a sufficient number of beds by subsidy. In some cases the Municipalities have made use of disused wards in their Fever Hospitals for training purposes, while in, at least, one instance a Municipal Sanatorium has been provided.

The true economy is prevention.

INFANT MORTALITY.

The following Table shows the number of deaths of infants under one year in each year since 1871, together with the infantile death-rates for the corresponding years. The infantile death-rate is estimated in terms of the proportion which obtains between the numbers of deaths under one year and the number of births registered during the year.

	No. of Deaths under 1 year.		Infantile Death-rate per 1000 Births.	
Year.	Annual.	Quinquennial Averages.	Annual Death-rates.	Quinquennial Averages.
1870	190		129	
1871	251		182	
1872	214		143	
1873	241		158	
1874	211	221	138	150
1875	204		132	
1876	254		160	
1877	234		143	
1878	277		174	
1879	218	237	128	147
1880	276		169	
1881	205		123	
1882	236		142	
1883	236		134	
1884	252	241	148	143
1885	228		134	
1886	280		152	
1887	217		128	
1888	238		139	
1889	247	242	146	140
1890	225		133	
1891	235		133	
1892	274		160	
1893	299		174	
1894	211	249	124	145
1895	337		180	
1896	292		162	
1897	237		134	
1898	317		167	
1899	343	305	192	167
1900	281		156	
1901	327		172	
1902	231		123	
1903	272		140	
1904	276	277	141	146
1905	289		147	
1906	280		144	
1907	197		106	
1908	200		110	
1909	162	225	89	119

The figures given in this Table may be considered from two points of view:—

(1) The number of deaths. It is clear that the numbers of deaths continued to increase on the whole fairly steadily from 1870 up to the end of 1906. Since the beginning of 1907 there has been a sudden and sustained fall in the number of deaths, so that the number of deaths recorded in the three years, 1907 to 1909 inclusive, is far lower than that recorded in any three consecutive years between 1870 and 1906.

This point may be illustrated by the following Table:—

Triennial Periods.	Total No. of Deaths Registered.	No. in excess of the Deaths, 1907-1909.
1870-1872	655	96
1873-1875	666	107
1901-1903	830	271
1904-1906	845	286
1907-1909	559	

Thus it is evident that the period 1907-1909 showed an annual saving of 32 lives as compared with the period 1870-1872, of 35 lives as compared with the period 1873-1875, and of 95 lives as compared with the period 1904-1906. It is to be observed that these figures represent gross figures with no reference whatever to variations in the numbers of the population.

It is abundantly evident, therefore, that during the last three years there has been a considerable and favourable change in the number of infantile deaths.

(2) In the second place the matter must be looked at from the point of view of the Infantile Death-rates.

The first Table shows in the clearest and most unmistakeable manner that from 1870-1906 the Infantile Mortality rate remained practically unchanged. This is all the more remarkable in view of the fact that during the same period the death-rates at all ages from all causes showed a progressingly diminishing ratio. On the other hand the Infantile Death-rate during the last three years, 1907, 1908 and 1909, has in each instance been far below anything previously recorded in the history of the Borough. The year 1909 itself stands out as the first year on record in which the Infantile Mortality was below 100 per 1000 births.

If we adopt the same comparison as was used in the case of the numbers of deaths we should find that if the Infantile Mortality-rate for 1907-1909 had been the same as that for 1870-1872 the number of infantile deaths would have been 823 instead of 559, as compared with the triennium 1873-1875 the number would have been 784, with 1901-1903 the number would have been 790, and with 1904-1906, 790.

It is perfectly evident, therefore, that there has been during the last three years an enormous saving of infantile lives. As a matter of fact, the difference in the number of deaths between those occurring in the triennium 1907-1909 and the two immediately preceding triennia represents, when the differences in the number of births is taken into consideration, an annual saving of 77 lives.

In seeking an explanation of these facts various considerations present themselves.

(1) It may be suggested that the improvement in the Infantile Mortality is the resultant of the improvement which has taken place in the general sanitary conditions of the Borough. Now, whilst I would be the last to deny that improved sanitary conditions have an influence upon Infantile Mortality, it is evident from the first Table that general sanitary improvements exerted no influence upon the Infantile Mortality up to the end of 1906. That is to say that for a period of 31 years from 1875 (the date of the passing of the Public Health Act), in spite of the enormous improvement in the death-rate at all ages, the Infantile Mortality remained practically unaffected. It is therefore clear that, so far as Ipswich is concerned, this factor has played no appreciable part in the reduction of the Infantile Death-rate.

(2) In the second place, the low Infantile Death-rate may be a coincidence, due merely to accidental circumstances or to especially favourable conditions.

If this explanation is the one, it is passing strange that the accidental circumstances should continue in existence for a period of three consecutive years, in exact contradiction to the experience of the previous 37 years. If the Infantile Mortality had been extremely low during one of the three years as compared with other years, the theory of accident or of the undisturbed influence of specially favourable circumstances might have been admissable. Under the actual circumstances of the case, I consider that the theory of accident is untenable.

(3) In the third place we may conclude that the scheme for the reduction of Infantile Mortality, which came into force in Ipswich in the beginning of 1907, has played at least some part in bringing about the present satisfactory condition of affairs. The scheme has been dealt with at some length in previous Reports, so that it is unnecessary to do more than state the salient features.

(*a*) The fundamental principal which has underlain the procedures adopted in the Borough has been the recognition of the elementary fact that if a child is to be properly reared it must get a proper start during the first few months of its life. Therefore, to avoid the danger which injudicious management of infancy may inflict on the infant, it is essential that the local authority should become aware of the existence of the infant at the earliest possible moment so that any necessary steps may be taken. The original scheme included a system of voluntary birth notification, but this was subsequently abandoned in favour of the Notification of Births Act. This Act has now been in force for 15 months, and as a matter of fact over 90% of the births are notified within the time specified in the Act.

(b) On the receipt of the notification the Lady Health Visitor is enabled to decide which infants are likely to benefit from a visit. The visit is at once paid, and any necessary advice given. The advice includes verbal information and printed instructions. It is found that the vast majority of the people receive the advice readily, and are more than willing to do all they can for the good of the infant. It is lamentable to record that the reverse is occasionally the case, but the exceptions are few and far between. It must, however, be said that there are parents who do not wish the children to survive.

During 1909, the visitor paid 1,770 visits to infants. She conducted special enquiries into the causes of death of 50 infants, and she investigated 33 Still Births, notified as occurring in the practice of midwives in the Borough. In addition she paid 34 visits to Midwives in order to exercise supervision over their methods of practice. She also dealt with 97 school cases. The total number of visits for all purposes paid by the Lady Visitor was 1984, as compared with 1,873 in the previous year, and 1,528 for the 10 months of 1907, during which she was in the employ of the Corporation.

(3) The third feature of the scheme in Ipswich is the provision of Milk for the benefit of those infants who cannot be nursed by their mothers, and whose parents are too poor to provide the necessary milk of the necessary quality. In Ipswich this milk is provided by private beneficence. I have no hesitation in stating that in my opinion the provision of the milk has been of the very first assistance in securing the results that have been obtained. In case after case, where the infant has been fed on Skimmed Condensed Milk, purchased on account of its cheapness, and left open in an illventilated unsatisfactory food cupboard, the changing of the food has resulted in immense benefit to the Infant. It is impossible that skimmed condensed milk, which is little more than sugar and water, can be considered suitable for infants' food, especially under the conditions under which it must be kept in the home, where the open tin is exposed to constant opportunities of contamination from dust, flies, etc , yet, on account of its cheapness, this is often the only food which the baby can get.

It is a matter of profound interest that the reduction in the Infantile Mortalily of the Borough coincides precisely with the establishment of special measures, devised for this particular purpose. I cannot consider the reduction other than a case of cause and effect in at least a considerable proportion. There is no suggestion that the Infantile Mortality will continue to drop as that is too much to expect in the light of the figures for the year 1909. We may hope, however, and hope with reasonable grounds, that the low rate of Infantile Mortality which has prevailed as an average for the last three years will not be greatly exceeded in the future except under special circumstances. If this hope is realised the Public Health Committee will have succeeded in accomplishing a work of manifold benefit to the welfare of the community.

That special procedures are necessary for the control of Infantile Mortality is a fact well known to all who have studied the problem. Infantile Mortality is due to a special series of conditions which can only be combated by special procedures. This fact, however, has been dealt with fully in previous Reports.

The following Table illustrates the causes of death in Infancy during 1909, and the three preceding years.

Table 1.—Causes of Death.

	1906.	1907.	1908.	1909.
Zymotic Diseases ...	5	22	10	5
Diarrhœa	67	14	32	9
Prematurity	42	36	32	30
Atrophy, Debility ...	68	41	43	42
Respiratory Diseases ...	27	36	29	30
Tubercle	6	7	10	3
All others	65	41	44	43
Total ...	280	197	200	162

The figures for 1906, 1907, and 1908 are given for comparison. It is obvious that one of the principal differences in 1909 was the small number of deaths from Diarrhœa, a fact to be explained by the cold wet summer. It is to be noted, however, that the Diarrhœa deaths in 1907 were almost equally low, yet the total number of deaths from all causes in 1907 was considerably in excess of 1909. Zymotic Diseases other than Diarrhœa were, however, much more fatal in 1907 than in 1909. In 1909, as compared with 1906, they were fewer deaths from Prematurity, Atrophy, Debility, and all other causes.

The following Table shows the Quarterly distribution of the deaths during 1909, classified according to the causes of death:—

	March.	June.	Sept.	Dec.	Whole Year
Zymotic diseases ...	—	—	2	3	5
Diarrhœa ...	1	3	4	1	9
Prematurity ...	9	5	10	6	30
Atrophy, Debility ...	13	13	2	14	42
Respiratory diseases	6	6	2	16	30
Tubercle ...	—	2	1	—	3
All others ...	19	11	3	10	43
Total ...	48	40	24	50	162
Death-rate per 1,000 Births ...	112	82	52	117	89

The Quarterly Infantile Death-rates are of great interest, and in order to elucidate the present position I have constructed the following Table :—

Quarterly Death-rates per 1,000 Births since 1890.

Year.	March.	June.	Sept.	Dec.
1890 ...	144 ...	92 ...	141 ...	160
1891 ...	147 ...	103 ...	90 ...	194
1892 ...	175 ...	126 ...	200 ...	132
1893 ...	148 ...	167 ...	250 ...	121
1894 ...	190 ...	113 ...	110 ...	78
1895 ...	125 ...	94 ...	329 ...	154
1896 ...	168 ...	88 ...	252 ...	147
1897 ..	102 ...	98 ...	209 ...	127
1898 ...	151 ...	90 ...	293 ...	137
1899 ...	134 ...	112 ...	387 ...	112
1900 ...	179 ...	129 ...	187 ...	138
1901 ...	237 ...	109 ...	193 ...	156
1902 ...	116 ..	125 ...	100 ..	149
1903 ...	127 ...	98 ...	162 ...	177
1904 ...	119 ...	112 ...	217 ...	119
1905 ...	186 ...	120 ...	154 ...	131
1906 ...	146 ...	107 ...	197 ...	137
1907 ...	138 ...	107 ...	83 ...	93
1908 ...	136 ...	95 ...	92 ...	117
1909 ...	112 ...	82 ...	52 ...	117
Average 20 years	149 ...	108 ...	184 ...	134

It is evident that the figures for each quarter for 1909 were much below the averages of recent years. The figures for the September quarter of 1909 are quite exceptional for that period of the year. The absence of Diarrhœa no doubt accounts for much of the difference, but certainly not for all of it, as in other years when the number of Diarrhœa deaths has been equally low the death-rate has not been nearly so low. Examples of this point are 1894 and 1902.

The following Table exhibits the difference between the death-rates of legitimate and illegitimate Infants :—

	No. of Births.		Death-rate per 1,000 Births.		
Year.	Legitimate.	Illegitimate.	Legitimate.	Illegitimate.	Both.
1906	1,807	102	138	235	144
1907	1,734	116	102	232	106
1908	1,712	96	106	177	110
1909	1,698	94	91	63	89

There has thus been a very considerable fall in the illegitimate death-rate. Illegitimate Infants receive special attention.

The results of enquiry by the Health Visitor into the methods of feeding of 1,280 Infants yield the following results. (The corresponding percentages for 1907 and 1908 are given for comparison) :—

	No. of Infants.	Percentages.		
Method of Feeding.	1909.	1909.	1908.	1907.
Wholly Breast-Fed	1,099	85·86	84·69	79.90
Partly Breast-Fed	26	2·03	2·80	4·50
Wholly Hand-Fed	155	12·11	12·51	15·60
Total	1,280	100	100	100

There is thus continued evidence of the tendency to increase in the amount of Breast-Feeding.

The following Table illustrates the kind of food adopted in the case of hand-feeding, and also the percentages obtaining between the number of Infants hand-fed, and the kind of food used, and the proportion borne by the hand-fed Infants in each group to the total number of Infants whose feeding was enquired into :—

			Percentage of all Feedings enquired into.		
Method of Hand-Feeding.	No. of Infants.	Percentage of Hand Fed.	1909.	1908.	1907.
Wholly Cow's Milk ...	114	73·54	8·90	9·30	8.30
Wholly Condensed Milk	22	14·19	1·71	1·64	3·50
Patent Foods ...	19	12·27	1·50	1·57	3·80
Total ...	155	100	12·11	12·51	15·60

The value of Condensed Milk as an Infants' Food is well illustrated by the following comparative Table of Analyses by Mr. W. Lincolne Sutton, the Public Analyst for the Borough.

It is evident that when a Full Cream Condensed Milk is diluted with the amount of water recommended by the manufacturers the result is a product poor in fat, in proteid and milk sugar, but possessed of a large proportion of cane sugar. The result is a product quite unsuited for infants' food.

With regard to Machine Skimmed Condensed Milk, the product consists of a solution of cane sugar in water, with a small proportion of proteid, and practically no fat at all. This is a substance quite unsuited for infants' food.

Unsweetened Full Cream Condensed Milk is the only kind of Condensed Milk which has any pretensions to being considered a fit food for the feeding of infants.

I am of opinion that every tin of Machine Skimmed Condensed Milk should have a conspicuous label stating that it should not be used as a milk substitute for the feeding of babies.

It is unfortunate that the cheapness of the machine skimmed article brings it within the reach of many who cannot afford cow's milk, but who imagine that they are getting an efficient substitute.

Comparison of Composition of Diluted Condensed Milk with that of Human Milk and Diluted Cow's Milk.

	Human Milk.	Cow's Milk.		Sweetened Condensed Milk, full cream, average composition.		
		Pure.	Plus 1 part water.	Un-diluted.	Plus 7 parts water.	Plus 14 parts water.
Water ...	88·3	87·6	93·8	29·24	91·22	95·3
Fat ...	3·4	3·6	1·8	9·0	1·12	·6
Milk-Sugar	6·4	4·8	2·4	12·0	1·5	·8
Proteids ...	1·7	3·3	1·65	8·46	1·0	·56
Ash ...	·2	·7	·35	1·3	·16	·08
Cane Sugar	nil.	nil.	nil.	40·0	5·0	2·66
Total Solids	11·7	12·4	6·2	70·76	8·78	4·70
Milk Solids	do.	do.	do.	30·76	3·78	2·04

ZYMOTIC DISEASES.

Table showing the total number of cases of Infectious Diseases notified in Ipswich during each year since 1890:—

Year.	No. of Cases Notified.	Quinquennial Averages.	Attack-rate per 1000 living.	Quinquennial Averages.
1890 (April 1 to Dec. 31)	179			
1891	316		5·50	
1892	191		3·27	
1893	952		16·07	
1894	812		13·50	
1895	399	534	6·53	8·97
1896	466		7·51	
1897	192		3·05	
1898	226		3·54	
1899	749		11·56	
1900	332	393	5·05	6·14
1901	319		4·78	
1902	509		7·50	
1903	296		4·30	
1904	343		4·91	
1905	345	362	4·87	5·27
1906	289		4·02	
1907	194		2·66	
1908	228		3·08	
1909	216		2·88	

The number of cases notified during 1909 was thus one of the lowest on record. The numbers of cases notified in 1892, 1897, and 1907 were fewer, but the attack-rate per 1000 living shows that notifiable infectious diseases were less prevalent in Ipswich during 1909 than in any previous year since notification was adopted, except in the one year 1907.

In the following pages the facts in connection with each variety of Zymotic Disease are considered in detail.

(1) Scarlet Fever.

The following Table shows the degree of prevalence of Scarlet Fever in the Borough since 1891, together with the number removed to Hospital and the percentage of Hospital Isolation.

Year.	No. of Cases Notified.	Attack-rate per 1000 living.	No. removed to Hospital.	Percentage removed to Hospital.
1891	145	2·54	89	61
1892	86	1·48	46	53
1893	698	11·90	148	21
1894	673	11·34	245	36
1895	190	3·16	92	48
1896	296	4·87	97	32
1897	68	1·08	40	58
1898	82	1·28	40	49
1899	311	4·80	123	39
1900	106	1·61	59	56
1901	120	1·80	75	62
1902	202	2·97	145	71
1903	146	2·12	120	82
1904	122	1·74	99	81
1905	102	1·44	78	76
1906	119	1·64	101	85
1907	75	1·03	66	88
1908	70	0·94	56	80
1909	100	1·33	91	91

Thus Scarlet Fever was slightly more prevalent than in the preceding two years, although never present in an epidemic form.

The Table shows that there have been two great epidemics of Scarlet Fever in Ipswich since notification was adopted, viz., in 1893 and 1894. There have also been three minor epidemics, viz., in 1896, 1899 and 1902. The 1902 epidemic was relatively mild.

The type of disease prevalent during the year was on the whole mild. There were four deaths, the death-rate thus being equal to 0·05 per 1000 living. All the deaths occurred in Hospital. In three cases death was due to septic poisoning. In two of these cases the child was suffering from septic broncho pneumonia on admission.

The cause of death in the fourth case was acute nephritis.

The case mortality was thus 4 %, a figure which is considerably in excess of the average of recent years.

For comparison of the rates of mortality from Scarlet Fever since 1890 see page 25.

The following Table indicates the quarterly numbers of notifications of Scarlet Fever both for the whole Borough and each Ward of the Borough :—

Quarterly Notifications.

Ward.	March.	June.	Sept.	Dec.	Whole Year.	No. removed to Hospital.	Percentage of Hospital Isolation.
St. Margaret's	8	10	22	10	50	49	98
St. Clement's...	—	4	15	6	25	24	96
Middle ...	—	—	5	2	7	6	99
Bridge ...	1	1	—	3	5	5	100
Westgate ...	5	3	1	4	13	7	53·8
Whole Borough	14	18	43	25	100	91	91

Thus Scarlet Fever was most prevalent in the St. Margaret's Ward, whilst the cases in the Middle and Bridge Wards were very few. The greatest number of notifications were received in the September Quarter. One-half of these were in the St. Margaret's Ward.

The following Table shows the age and sex distribution of the cases of Scarlet Fever :—

	Age Periods ..	Under 1 year.	1 year and under 5 years.	5 yrs. and under 15 yrs	15 yrs. and under 25 yrs.	25 yrs. and under 65 yrs.	All Ages.
Number of Cases Notified.	Male ..	—	10	32	4	—	46
	Female ..	1	10	37	3	3	54
	Total ..	1	20	69	7	3	100

There were four "Return" cases during the year. Of these three were members of one family. In each instance the case which caused the "Return" case developed Nasal Discharge after leaving Hospital. This was the cause of the "Return."

(2) Diphtheria (including Membranous Croup).

The following Table shows the degree of prevalence of Diphtheria in Ipswich since 1891 :—

Year.	No. of Cases Notified.	Attack-Rate per 1,000 Living.	No. removed to Hospital.	Percentage removed to Hospital.
1891	73	1·27	8	10
1892	38	·65	3	8
1893	30	·51	—	—
1894	43	·72	—	—
1895	89	1·48	1	1
1896	73	1·20	6	8
1897	38	·61	2	5
1898	41	·65	5	12
1899	58	·92	2	3
1900	53	·83	6	11
1901	88	1·32	16	18
1902	53	78	10	19
1903	50	·72	18	36
1904	123	1·75	70	57
1905	114	1·61	70	61
1906	78	1·08	53	68
1907	51	·70	32	68
1908	105	1·42	89	86
1909	66	·88	50	75

Thus Diphtheria was markedly less prevalent than during the previous year, and the degree of prevalence, as represented by the Attack-Rate per 1,000 living, was below the average of the previous 18 years. Comparison as to Hospital Removal is not possible for the same period as in the case of Scarlet Fever, since Hospital Isolation was practically not in existence until 1904. It is clear that Diphtheria has been on the whole more prevalent of recent years. This is the case in many other towns.

Eight deaths from Diphtheria occurred during the year, the equivalent of a death-rate of 0·10 per 1,000 living. The comparative death-rates from Diphtheria since 1890 are given on page 25.

Of the deaths from Diphtheria during 1909, three occurred in Hospital and five at home. Thus the case mortality per cent. of Hospital treated cases was 6·2 % as compared with a case mortality per cent. of home treated cases of 31·2 %.

The difference between the mortality of Hospital cases as compared with Home treated cases is well brought in the following Table :—

Year.	Hospital Cases.			Home Cases.		
	No. treated.	No. died.	Case mortality per cent.	No. treated.	No. died.	Case mortality per cent.
1903	18	3	16·6	32	8	25·0
1904	70	1	0·14	53	9	17·0
1905	70	2	2·8	44	8	18·2
1906	53	4	7·7	25	5	20·0
1907	32	3	9·3	19	5	26·3
1908	89	5	5·6	16	5	31·2
1909	48	3	6·2	16	5	31·2

There is thus an evident discrepancy between the results of Hospital treatment and Home treatment. The fault, however, does not lie in the treatment, but in the fact that medical aid is sought too late to be of any remedial value. In each case in 1909, when death occurred at home, the fate of the case was decided before medical aid was sought, death occurring either within a few hours, or the case being of such a nature that removal to Hospital was impossible.

In previous Annual Reports I have referred to the influence of Antitoxin in the treatment of Diphtheria, and I, again, desire to emphasise in the strongest possible manner that the successful treatment of the disease depends upon two points.

(1) The early recognition of the nature of the case.

(2) The immediate use of sufficient quantities of Antitoxin.

It is a cardinal principle in the treatment of Diphtheria that the longer the delay in the administration of antitoxin the greater is the liability to death.

In the three fatal cases at the Hospital the cause of death was Cardiac Paralysis. In each case the child had been ill more than five days previously to having been seen by a medical man. This simply means that the final issue of the case had been decided before treatment was begun.

In the following Table is set forth the distribution of the disease in the various Wards of the Borough, and during the Quarters of the year:—

Ward.	Quarterly Notifications.				Total Whole Year.	Removal to Hospital.	
	Mar.	June	Sept.	Dec.		Number Removed.	Percentage.
St. Margaret's	9	2	3	1	15	10	66·6
St. Clement's	5	2	1	..	8	7	87·5
Middle ...	3	1	1	2	7	5	71·4
Bridge ...	5	5	3	3	16	10	62·5
Westgate ...	6	4	1	9	20	16	80·8
Whole Borough	28	14	9	15	66	48	72·7

Thus Diphtheria was much more prevalent during the March quarter. This was merely a continuation of the outbreak which occurred in the December quarter of the previous year. The percentage of removal was satisfactory.

The following Table shows the age and sex distribution of the cases notified during the year:—

Age Periods.	Under 1 year.	1 year and under 5 years	5 years and under 15 years	15 years and under 25 years	25 years and under 65 years	All Ages.
Male	...	10	28	...	2	40
Female	...	9	13	2	2	26
Total	...	19	41	2	4	66

Diphtheria is a disease which is principally maintained by the existence of mild unrecognised cases, and by "carriers." The influence of these factors in maintaining the prevalence of the disease has been sufficiently dealt with in previous Reports. I, however, have to report on one outbreak, the character of which is worthy of special mention. Towards the end of the year investigation showed that three cases of Diphtheria had occurred in connection with the Infants' department of the Ranelagh Road Schools, and that there was another infant absent with a sore throat, which subsequently was found to be Diphtheria As it was evident that there was some local condition in existence, I took swabs from the 70 infants in the department. These on examination showed that no less than 22 infants were harbouring Diphtheria Bacilli in their throats or noses. Of these two subsequently developed typical clinical Diphtheria. The whole of the children and their contacts were at once excluded from the school. The result was that there were only 20 infants left in the department. As it was clearly useless to keep the department open, it was closed for a fortnight. The school was re-opened for ten days before the Christmas holidays. No further cases occurred, either amongst the harbourers of the poison of the disease or contacts with them. Swabs were taken at intervals from the harbourers until all were free from infection.

I have no doubt that the action taken cut short a sharp outbreak of the disease, and I quote the circumstances as an example of the advantage to the Public Health of a properly equipped Laboratory for the purpose of carrying out such investigations. Without such means several other cases would probably have occurred, with possibly one or two deaths. As it was, two of the cases of the developed disease proved fatal. It is almost needless to add that the school premises, slates, pencils, &c., were thoroughly disinfected, and the school books destroyed.

(3) Enteric Fever.

The following Table shows the degree of prevalence of Enteric Fever in Ipswich since 1891:—

Year.	No. of cases Notified.	Attack-rate per 1,000 living.	No. removed to Hospital.	Percentage of Hospital Isolation.
1891	77	1·34	31	40
1892	45	·77	18	40
1893	134	2·27	47	35
1894	41	·68	10	24
1895	86	1·41	24	28
1896	57	·92	18	31
1897	55	·87	28	51
1898	67	1·05	31	46
1899	284	4·38	109	38
1900	92	1·40	60	65
1901	62	·93	48	77
1902	173	2·55	130	80
1903	45	·65	31	69
1904	50	·71	40	80
1905	50	·70	39	78
1906	36	·50	31	86
1907	33	·46	31	94
1908	15	·20	12	80
1909	15	·20	13	86

It is at once evident that Enteric Fever has been enormously less prevalent of recent years. Indeed there is ground for hope that Enteric Fever will cease in the course of time to be other than an occasional disease. Whilst it would be decidedly premature to consider that this time has now arrived, nevertheless it is legitimate to conclude that the figures of this Table afford reasonable grounds for the belief that the conditions which caused the previous high degree of prevalence have ceased to exercise their influence.

As the matter is one of vital importance, I propose to treat it at some length.

Enteric Fever is spread chiefly through the following means:—

(1) Contaminated Water: so far as Ipswich is concerned, the water supply has played no part in determining the prevalence of enteric fever in the past.

(2) Contaminated Food: in this relation two foods only will be mentioned, viz.:—

(*a*) Milk: contaminated milk has never been shown to have caused enteric fever in Ipswich.

(*b*) Shell-fish: in my Annual Reports for 1907 and 1908 the influence of cockles in relation to enteric fever has been sufficiently emphasised. It is, therefore, unnecessary to repeat previous warnings on the subject, with this proviso, that enteric fever will continue to exist in Ipswich, and may occasionally assume epidemic proportions unless the Local Government Board accede to the request of the Corporation of Ipswich and make the collection of cockles intended to be used for human food from within the sewage area of the river Orwell, an offence punishable in an appropriate manner.

The following Table will illustrate the influence of cockles in maintaining enteric fever in the Borough:—

Year.	No. of Cases Notified.	No. due to Cockles.	Percentage of Cockle Cases.
1902	173	35	20
1903	45	5	11
1904	50	2	4
1905	50	9	18
1906	33	7	21
1907	33	9	27
1908	15	7	46
1909	15	2	13

(3) Local Insanitary Conditions: prior to 1894 Ipswich was a privy midden town. In 1894 there were over 8,000 privy middens in the town. To-day there are 96. Of these 69 are situated in the Rural Districts of the Borough, so that there are only 27 privies in the town proper, 20 having been connected to the water carriage system during the year.

I am convinced that the low degree of prevalence of enteric fever in Ipswich at the present time, in spite of the cockle menace, is due to the substitution of the water carriage system in place of the privy midden system, which, from its mere existence, constitutes a foul and abominable nuisance, and, from the point of view of public health, stands condemned as a principle cause of endemic enteric fever. The accompanying chart shows in a striking manner the relationship between the degree of prevalence of enteric fever and the number of privy middens, and I would again emphasise the fact that the only difference that exists in the town at the present day as compared with the conditions which obtained in the past is, from the point of view of the prevalence of enteric fever, that a high degree of enteric prevalence was associated with the existence of many privies, whilst a low degree of enteric prevalence ensued on their practical disappearance.

The essential points disclosed by this chart are—

(1) That when there were many privies there was much enteric fever.

(2) That during the same period there were marked epidemic fluctuations.

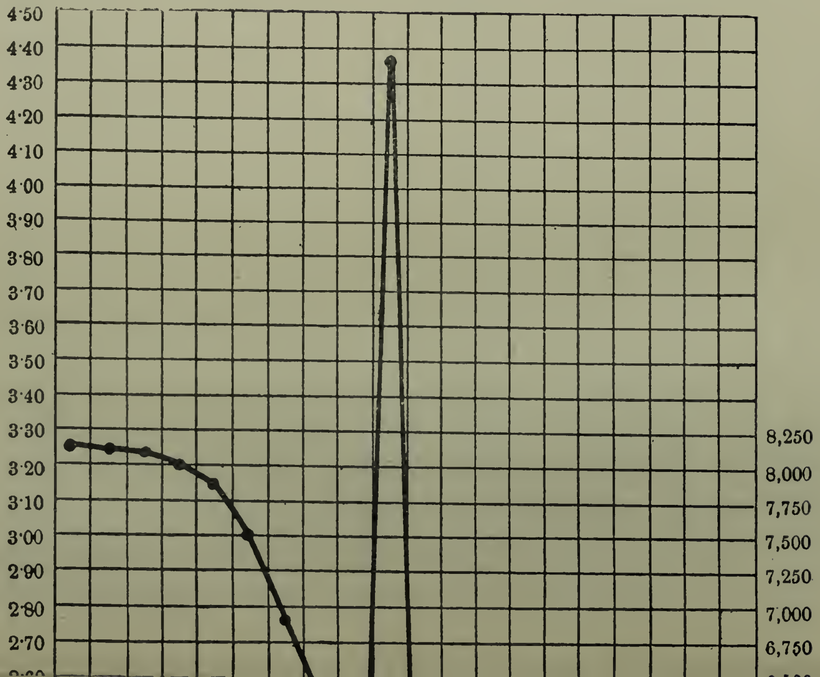
(3) When the privies fell to below 2,000 in number (from 1903 onwards to the present time) the epidemic fluctuations ceased and a progressive diminution in the number of notified cases set in, which has continued up to the end of 1909, when the rate of attack per 1000 living was the lowest of which there is any record in the history of the Borough.

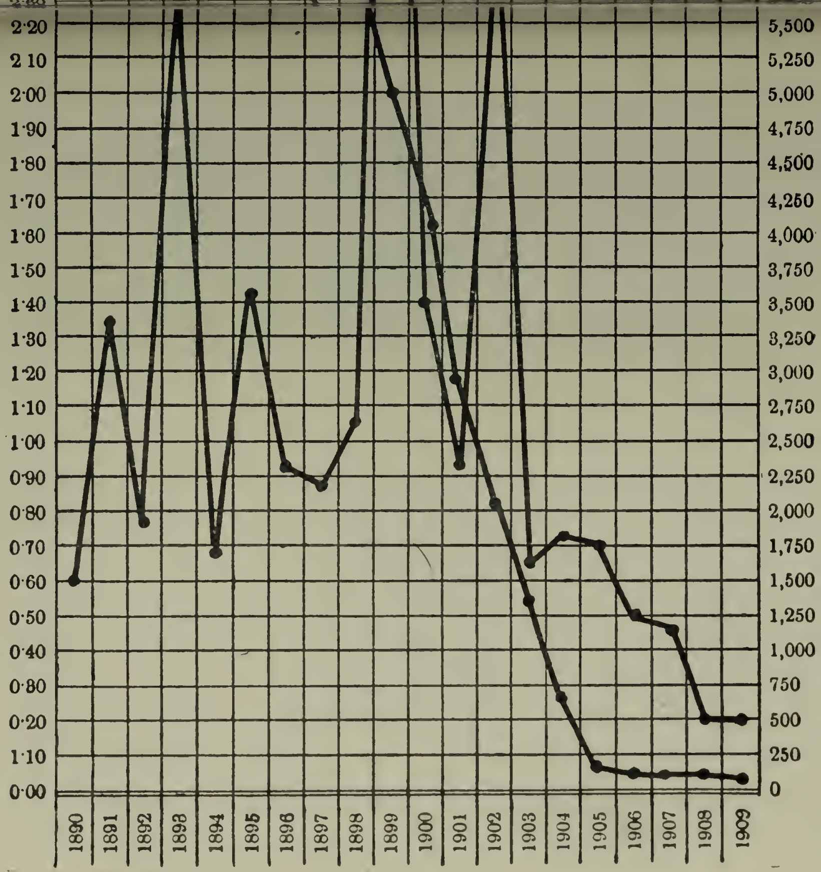
I append a Table of the Monthly Notifications of Enteric Fever in Ipswich since 1898, which illustrates another aspect of the question :—

Year.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Whole Year.
1898	2	...	2	...	2	...	3	6	11	19	15	7	67
1899	7	4	2	9	3	6	14	27	88	87	24	13	284
1900	5	5	4	1	5	1	6	12	17	14	14	8	92
1901	1	3	2	..	1	...	5	7	5	11	19	8	62
1902	3	5	4	4	7	17	39	25	37	16	14	2	173
1903	2	4	1	2	2	4	2	4	6	5	7	6	45
1904	3	5	3	5	4	5	2	5	9	6	2	1	50
1905	...	...	1	3	9	3	5	19	3	4	2	1	50
1906	...	1	...	2	3	3	1	4	7	11	4	...	36
1907	1	1	1	1	1	6	6	3	5	...	6	2	33
1908	...	...	...	1	2	2	5	3	2	...	...	...	15
1909	...	3	...	...	...	2	3	...	5	1	1	...	15
Total	24	31	20	28	39	49	91	115	195	174	108	48	922
Quart'rly Total	75			116			401			330			

Chart showing the number of Privy Middens in the Borough and the Death-rate per 1,000 living from Enteric Fever in Ipswich since 1890.

The figures on the left-hand represent the attack-rates per 1,000 living.
The figures on the right indicate the number of privy middens in existence.

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It is at once evident that in Ipswich Enteric Fever is most prevalent during August, September, October, and November, that is to say during the months of ordinary Epidemic prevalence. On analysing the Table, however, it is clear that this predominant autumnal variation has practically ceased since the beginning of 1903, and during the last three years there is no evidence of any autumnal rise at all. In other words Enteric Fever during these years has ceased to show its Epidemic character.

I ascribe the change to the abolition of the opportunities of infection, which in former years were provided by the privies situated within a few feet of the homes of the people. The privy was the source from which the regular Autumn Epidemic of greater or less severity arose. With the abolition of the privy the opportunities of infection disappeared. Hence the disappearance for a period of practically seven years of anything like an Epidemic degree of prevalence of the disease.

The following Table illustrates the Ward distribution and the Quarterly distribution of the disease :—

Ward.	No. of Notifications.				Whole Year.	No. Removed to Hospital.	Percentage Isolated in Hospital.
	Mar.	June	Sept.	Dec.			
St. Margaret's	1	...	1	1	3	2	66·6
St. Clement's	...	1	3	1	5	5	100
Middle ...	..	1	1	...	2	1	50
Bridge ...	2	...	3	...	5	5	100
Westgate ...	...	...	...	...	...	...	...
Whole Borough	3	2	8	2	15	13	86

There were three deaths from Enteric Fever during 1909, the equivalent of an annual rate of mortality of 0·04 per 1,000 living.

The case mortality per cent. was in excess of previous years. The cases, however, were all of a severe type. Of the deaths, two occurred in Hospital, whilst one was a home-treated case, which was at the point of death before medical advice was sought.

The following Table gives the age and sex distribution of the notified cases :—

Age Periods.	Under 1 year.	1 year and under 5 years.	5 years and under 15 years	15 years and under 25 years	25 years and under 65 years	All Ages.
Males	...	...	...	3	4	7
Females	...	...	...	5	3	8
Total	...	...	...	8	7	15

Of the cases notified during the year two were imported. There were thus only 13 local cases.

(4) Puerperal Fever.

2 cases of puerperal fever were notified during the year, both of which recovered.

Neither the cases occurred in the practise of a midwife.

The average annual number of notifications during the previous 10 years was 3·4.

(5) Smallpox.

No cases of smallpox were notified in 1909.

I again point out that there is an increasing tendency to neglect the protection afforded by vaccination.

Although Smallpox has not been much in evidence of recent years, the whole of the teaching of experience points to the conclusion that it may recur in a greater or less degree of severity, and that the community least protected will suffer most.

The last case of Smallpox in Ipswich occurred in 1902.

(6) Erysipelas.

Thirty-three cases of Erysipelas were notified in 1909, with one death.

I again reiterate the view that the retention of Erysipelas as a notifiable disease is unnecessary. It is suggested that there is a relationship between the occurrence of cases of Erysipelas and certain houses. Although this may be the case in other towns, there is complete absence of evidence that it is so in Ipswich.

NON-NOTIFIABLE ZYMOTIC DISEASES.

Measles.

Seventeen deaths from Measles were registered during 1909, as compared with an average of 21 deaths per annum since 1890.

The Measles death-rate per 1,000 living was equal to 0·22 as compared with an average of 0·32 for the previous 20 years.

Of the 17 deaths during 1909, two were sporadic cases. The remaining 15 were due to the occurrence of the disease in Epidemic form. The Epidemic began in August, and continued up to the end of the year. During that time 323 cases were notified from the Infant Departments of certain of the schools.

The procedures adopted in the present Epidemic were the same as in the Epidemic of 1807-1908, viz. :—

(1) Exclusion of all cases from School for four weeks.

(2) Exclusion of all contacts from Infant Departments.

(3) Exclusion of all contacts who have not had Measles from the upper Departments of the Schools.

(4) Visitation of infected homes by the School Nurse.

The effect of these procedures upon the Epidemic cannot at the time of writing be adequately weighed, therefore the consideration of the features of the present Epidemic will be reserved for a future Report.

This much may, however, be said, that the procedures adopted do not appear to have been any less successful than those adopted in previous Epidemics.

Whooping Cough.

During the year 1909, 15 deaths were referred to Whooping Cough, as compared with an average of 19 deaths for the previous 20 years. The death-rate per 1,000 living was thus equal to 0·20 as compared with an average of 0·29 for the previous 20 years.

Of the deaths during 1909, two occurred in the March quarter, one in the September quarter, and 12 in the December quarter. The disease was most prevalent during the December quarter in the Bridge Ward. The procedures adopted were the same as for Measles.

Diarrhœa.

Sixteen deaths were ascribed to Diarrhœa during 1909, as compared with an average of 59 for the preceding 20 years. The Diarrhœa death-rate was equal to 0.22 per 1,000 living, as compared with an average of 0·91 for the previous 20 years.

Of the Diarrhœa deaths, eight occurred in the September quarter, and four in the December quarter.

There is no doubt that the low Diarrhœa mortality was in large part due to the cold wet summer. In part the low Diarrhœa mortality of recent years may be due to the greatly improved sanitary condition of the town, brought about by the disappearance of the privy middens.

Of the deaths from Diarrhœa, nine were of Infants under one year of age.

BOROUGH ISOLATION HOSPITAL.

The number of cases remaining under treatment at the Borough Fever Hospital at the end of 1908 was 24. During the year 1909, 154 cases were admitted for treatment. The number of cases treated during 1909 was thus 178, as compared with 187 and 158 in 1907.

Of the cases treated, 152 were discharged convalescent, 10 died, and 16 remained under treatment on December 31st, 1909.

Of the cases removed to Hospital, 91 were Scarlet Fever. Of these 4 died, a case Mortality of 4·39 %.

Fifty cases of Diphtheria were removed to Hospital. Of these two were found not to be cases of Diphtheria. There were thus 48 cases of Diphtheria treated. Of these 3 died, the case Mortality per cent. being 6·2 %.

Thirteen cases of Enteric Fever were removed to Hospital. Of these, three died, or a case Mortality of 15·3 %.

Of the two cases notified as Diphtheria, which were not Diphtheria, one died, the cause of death being Broncho-Pneumonia.

The four "Return" cases of Scarlet Fever occurring during the year are referred to in the section on Scarlet Fever.

The Mortality from Scarlet Fever was unusually high.

The three deaths from Diphtheria were due to Cardiac Paralysis, and in each case the patient had been ill five or more days before admission. In all other cases, when the opportunity for early treatment was forthcoming, the recovery was rapid and complete.

The health of the nursing staff was exceptionally good, only one case of Zymotic Disease occurring amongst the staff—viz., one of Scarlet Fever in a housemaid, who made a good recovery.

I have pleasure in reporting that, at last, each of the wards of the Hospital has been provided with a proper bathroom. This long delayed and essential requisite for the proper and efficient treatment of cases of Fever has been provided none too soon. The interior of the new Nurses' Home was redecorated during the year; the passages, bathrooms, Nurses' sitting-rooms, &c., being painted and finished with ripolin. The walls of the Nurses' rooms were distempered.

I have to thank the Matron and the other Members of the staff for the loyal assistance given me during the year.

MUNICIPAL LABORATORY.

238 swabs from suspected cases of Diphtheria were examined during the year, of which 48 were positive, and 190 negative.

Twenty-one specimens of blood were examined for the Widal reaction, of which nine were positive, and twelve negative.

In addition, the Laboratory has proved of the greatest possible value in elucidating the diagnosis, and determining the fact of cure in doubtful cases of Ringworm.

PORT SANITARY AUTHORITY.

In my 1908 Report to your Authority it was pointed out that inspection of the shipping using the Port had been commenced as a routine procedure. The work has been continued in the same way during 1909, and the following Tables briefly summarise the work done:—

TABLE I.

Total number of vessels inspected	340
Number of re-visits	342
Total	682

The vessels inspected belonged to the following classes:—

British Steam Ships	82
British Sailing Ships	45
British Barges	137
Foreign Steam Ships	31
Foreign Sailing Ships	45
Total	340

The Nationalities of the vessels inspected were as follows:—

British	264
Danish	18
German	14
Norwegian	12
Dutch	9
French	9
Swedish	8
Italian	3
Spanish	1
Greek	1
Russian	1
Total	340

Of the vessels inspected, 98 or 28 8% showed defective conditions as compared with 40·67% defective in 1908. There has thus been a very considerable improvement since inspection was begun.

The following Table shows the distribution of these defective conditions according to the class of vessel :—

Class.	No. Inspected.	No. Defective.	Percentage Defective.
Steamships ...	108	33	30·55
Sailing Ships ...	95	32	33·68
Barges ...	137	33	24·08

These percentages compare very favourably with those of the previous year when the respective percentages of defect were 43·41, 46·54, and 34·72.

The defective conditions found during the year were distributed as follows :—

Class of Vessel.	No. of Defects.
Steamships	188
Sailing Ships	108
Barges	70
Total ...	366

This figure compares with a total of 1,016 defects discovered in the previous year. It is impossible to conceive of a more telling illustration of the advantages of inspection. The greatest diminution has taken place in the Barges constantly using the port. In their case the number of defects has fallen no less than 75%. In the case of Steamships, the number of defects found has fallen 46%, and, in the case of Sailing vessels, 33%. In each case it is the constant traders that have shown the improvement.

The nature of the defects discovered may be summarised as follows :—

45 defects were due to various conditions of filth in connection with the crews' quarters as compared with 351 in the previous year.

65 defects were found in connection with the W.C.'s provided for the crews as compared with 90 in the previous year. The defects included varying degrees of filth and dilapidations.

27 defects were found in connection with the means of lighting provided as compared with 94 in 1908. The defects included various degrees of insufficiency of lighting and broken and dilapidated portlights, decklights, etc.

46 defects were associated with ventilation as compared with 90 in the previous year.

Thus defects of cleanliness, lighting, and ventilation, accounted for 183 defects or exactly one half of the total defects discovered.

This figure compares very favourably with a total of 625 for the corresponding items in 1908.

The remaining defects occurred in connection with the heating apparatus, leakages into crews' quarters causing dampness, communications between chain lockers and crews' quarters, keeping of ships stores in the crews' quarters, storage of food and water, overcrowding, etc.

It is thus abundantly evident that inspection was necessary, and that its institution had been followed by a remarkable diminution in the defects discovered. The reason for the diminution is twofold, (1) Because the vast majority of the vessels using the port are regular traders, and are therefore constantly under the supervision of the Inspector, and (2) Because the class of owners of Ipswich vessels is such that the efforts of the Authority have been heartily seconded. The result has been that the masters of the vessels have been compelled, in their own interest, to keep their vessels in a clean and satisfactory condition.

11 cases of sickness were investigated during the year as compared with 34 in the previous year. None of the cases were of an infectious nature.

The question of the inspection of imported food stuffs in accordance with the terms of the Regulations as they apply to Ports has received considerable attention.

In the first instance the Regulations as to unsound meat do not apply to Ipswich to any appreciable extent since no appreciable quantity of meat is imported.

With regard to food stuffs, other than meat, the greater proportion is transhipped at other ports, and the food stuffs arrive in Ipswich by certain recognised vessels three times weekly. The foods imported are chiefly groceries and materials used in the manufacture of jam.

The inspection is carried out by the Port Sanitary Inspector, who is a fully qualified Food Inspector.

Up to the present time no food stuffs have been found which would require seizure.

FACTORIES AND WORKSHOPS.

The inspection of Factories and Workshops forms a special part of the duties of one of the Sanitary Inspectors. This arrangement is found to secure the best results in the carrying out of the provisions of the Acts.

The amount of work done during 1909 compares satisfactorily with that carried out in the previous year. Special attention was paid to the condition of Workshops, the Factories having received special attention in the previous year.

Only four Notices concerning Sanitary matters were served on Factories, as compared with 33 in the previous year, showing a marked improvement.

With respect to Workshops, 289 were inspected, as compared with 181 in the previous year. As a result, 85 Notices requiring removal of sanitary defects were issued, as compared with 21 in the previous year.

The defects found in Factories and Workshops numbered 118, as compared with 69 in the previous year.

The sanitary works carried out included the provision of 28 new W.C.'s as compared with 40 in the previous year, seven intervening spaces, as compared with 27, and miscellaneous work, 16 as compared with 37. The total was 51 as compared with 104 in the previous year.

The following Tables show the numbers of Factories and Workshops on the Register.

The Factories number 207, as compared with 206 in the previous year, and the Workshops number 412, as compared with 408.

Taken as a whole the condition of the Factories and Workshops in Ipswich compares very favourably with that of other towns.

INSPECTION OF FACTORIES & WORKSHOPS.

1909.

	Inspections.	Notices.
Factories	115	4
Workshops	289	85
Workplaces	74	7
	478	96

		Found.	Remedied.
Want of Cleanliness		13	13
Want of Ventilation		12	10
Overcrowding		2	2
Sanitary Accommodation	Insufficient	3	3
	Unsuitable or defective	24	24
	Not separate for Sexes	1	1
Breach of Special Sanitary Requirements for Bakehouses		63	63
		118	116

Works Carried Out.

	Factories.	Workshops.	Workplaces.	Total.
New W.C.'s	20	6	2	28
Intervening spaces	4	3	—	7
Gullies removed outside	1	2	—	3
New Urinals provided	1	—	—	1
W.C.'s cleansed, unblocked, &c.	4	6	2	12
Total	30	17	4	51

Intimations from H.M. Inspector of Factories ... 10

Factories on Register.

Book Binders	3
Boot Factories	5
Bottle Washers	4
Box Factories	1
Breweries	3
Brick Works	3
Cabinet Works	4
Chemical Manure, &c.	5
Coach Builders	3
Clothing Factories	3
Saw Mills	25
Gas Producer Works	4
Jam Factories	1
Laundries	4
Maltings	20
Meat Factors	7
Mineral Water Wks.	7
Mills	15
Organ Builders	1
Printers, &c.	33
Sacks, Tents, &c.	4
Seed Cleaning, &c.	7
Soap Manufacturers	1
Sugar Boilers	3
Ship Yards	3
Tan Works	1
Tea Mixing, Currant Dressing, &c.	3
Tobacco	1
Wholesale Bakers	3
Jewellers	2
Engineers, Iron Founders, &c.	28
Total	207

Workshops.

Bakers	100
Builders, &c.	33
Beer Bottling	3
Brick Makers	3
Basket Makers	1
Coopers	3
Dress Makers	60
Sugar Boilers	5
Engineers & Smiths	26
Furniture & Cabinets	10
Jewellers	5
Laundries	3
Lime Burners	3
Milliners	31
Motor & Cycles	14
Sacks, Tents, &c.	4
Milk Depôts	3
Maltings	5
Stone Masons	5
Saddlery, Boots, &c.	28
Tailors	50
Wheelwrights	8
Others	4
Upholsterers	5
Total	412

Provisions of Factory Acts with reference to Home Work.

Lists of outworkers received twice in the year 91, involving 14 contractors and 553 outworkers.

Of these outworkers, 526 were employed in the making, repairing, &c., of wearing apparel, 17 in the making of sacks, &c., 20 in connection with furniture and upholstery, and four in the making of paper bags and boxes.

Lists of outworkers received once in year, 8 involving one contractor and 31 outworkers. Of these 20 were employed in the making, repairing, &c., of wearing apparel, and 12 in connection with furniture and upholstery.

The addresses of four outworkers engaged in making, repairing, &c., of wearing apparel were received from other Councils, and the addresses of nine outworkers engaged in making, repairing, &c., of wearing apparel were forwarded to other Councils.

293 visits were paid to 281 houses in the Borough where Home Work is carried on. In seven instances these were unsatisfactory, and notices were served requiring the carrying out of the necessary cleansing and limewashing. Six were premises where wearing apparel was made or repaired, and one where sacks, &c., were made or repaired.

Although forms are sent out twice yearly to employers of outworkers on which to make their returns, in 24 instances it was necessary to send a second notice before the lists were received.

WATER SUPPLY.

The Water Supply of the Borough is obtained from a deep well in the chalk, supplemented by a number of small surface supplies.

The following Table indicates the amount of the supply from each source, the figures given being the totals for the whole year :

Total water from the deep well in the chalk ...	508,495,000
Total amount from service supplies	70,000,000
Total water supply for all purposes ...	578,495,000
Average supply per day for all purposes . .	1,584,918
Supply per head per day for all purposes, including trades	20·9

31 samples were taken during the year and submitted for analysis. The results of the examinations of the deep well water show that it is always of a high degree of purity.

The waters from surface supplies do not show the same high quality, but they are nevertheless quite suitable for domestic purposes.

I must repeat the warning with reference to the Spring Road surface supply, which is one which should be discontinued at the earliest possible date. This supply is open to possible pollution from several sources.

Considering the nature of the surface supplies and the opportunities of pollution, the growth in the size of the town, and the fact the maximum water consumption is now within a very little of the maximum production, the Corporation will shortly be faced with the necessity of providing an additional or supplemental supply of such nature as will meet the requirements of the case. The water supply sought for should be one of such a nature as to be capable, if at any time it becomes for any reason necessary to abandon the present supply, of such extension as will meet the whole requirements of the town.

The unimpeachable purity of the water supply is vital to the prosperity of the town.

HOUSING AND TOWN PLANNING ACT, 1909.

Section 17 enacts that "it *shall be the duty* of every Local Authority to cause to be made from time to time inspection of their district, with a view to ascertain whether any dwelling house therein is in a state so dangerous or injurious to health as to be unfit for human habitation.

If any dwelling house is found to be in such a state the Local Authority *must* make an order prohibiting the use of the house for human habitation until it is made fit, when the Local Authority shall determine the closing order. If the dwelling house is not made fit for habitation within three months of the date of issue of a closing order, the Local Authority *must* take into consideration the question of the demolition, and if satisfied that the continuing in existence of the dwelling house is a nuisance or dangerous or injurious to the health of the public or of the inhabitants of the neighbouring dwelling houses they shall order the demolition of the building unless satisfied that the necessary works will be undertaken by the owner within six months.

The appeal on the part of the owner in the case of either a closing or demolition order is to the Local Government Board.

Section 14 enacts that in the case of a house with a rental not exceeding £26 per annum (in the case, Ipswich), there shall be implied a condition that the house is *in all respects* reasonably fit for human habitation at the time of letting.

Section 15 enacts that the house during the holding shall be maintained *in all respects* reasonably fit for human habitation. It also gives powers of entry for inspection purposes and empowers the Local Authority, if they do not make a closing order, to require the landlord to carry out any such works as a notice may specify for the purpose of rendering the house in all respects reasonably fit for human habitation. If the landlord does not carry out the specifications contained in this notice two things may happen—

(1) He may close the house, in which case a closing order will be deemed to have become operative, or

(2) The Local Authority may do the necessary works and recover the costs.

The appeal of the landlord against the specifications contained in the notice is to the Local Government Board.

The sections quoted will convey some idea of the scope of the Housing Act of 1909.

It is to be hoped that the powers conferred on the Local Authority by the Act will do much towards the improvement of the housing conditions of the people.

Power is given to the Local Government Board to enforce the execution of the Housing Acts.

MIDWIVES ACT, 1902.

There were 12 Midwives on the local roll during 1909. Of these, one did not practice, whilst four were employed in connection with the work of the Nurses' Home, Lower Brook Street. There were only four Certificated Midwives in actual practice in the Borough, other than those employed at the Lower Brook Street Home.

The number of confinements attended by Midwives was 896, as compared with 814 in 1908, and 944 in 1907. The Midwives thus attended exactly 50 % of the registered births.

Notifications of the sending for medical help were, in the case of the mother, received on account of abnormal presentation 12, antepartum hæmorrhage 8, delayed labour 7, instruments required 6, retained placenta 5, ruptured perineum 3, high temperature 1, miscellaneous 10; total 52.

In the case of the child help was summoned in 47 instances, viz., feebleness 30, inflammation of the eyes 11, and convulsions 6.

The number of still births occurring in the practise of midwives was 33, as compared with 42 in the previous year, 30 in 1907, and 1 in 1906.

34 visits were paid to midwives in their own homes.

It is to be noted that there is evident improvement in the working of the requirements of the Act in Ipswich. On the whole the administration of the Act becomes easier year by year.

METEOROLOGICAL TABLE.

Kindly supplied by Mr. F. Woolnough from the readings taken on the Ipswich Scientific Society's Instrument.

Month.	Barometer.	Temperature (Mean).				Rainfall.		Deaths from	
		Maximum.	Minimum.	Mean.	Earth.	Amount in inches.	No. of days.	Respiratory Diseases.	Diarrhœa.
January ..	30·14	45·7	33·4	39·5	45·2	0·74	10	21	1
February ...	30·12	46·4	31·3	38·8	42·7	1·14	11	18	...
March ...	29·67	45·3	32·8	39·0	40·5	2·32	24	17	...
April ...	29·97	59·7	40·8	50·2	43·6	1·86	13	10	2
May ...	30·80	64·9	43·5	54·2	47·8	1·28	10	9	1
June ...	29·95	64·1	48·7	56·4	50·9	3·82	16	6	...
July ...	29·90	69·9	53·1	61·5	53·1	3·48	16	5	4
August ...	29·96	71·5	53·8	62·6	55·8	2·09	12	4	1
September	30·01	63·6	49·9	56·7	55·4	2·00	15	5	3
October ...	29·83	61·0	50·2	55·6	54·0	3·53	24	10	2
November	29·91	49·6	37·4	43·5	50·7	1·42	12	7	1
December...	29·59	44·0	35·0	39·5	45·7	4·55	21	26	1
Means of the whole year ...	29·98	57·1	42·5	49·8	48·8	28·30	184	148	16

Comparative View of the Birth-rates, Death-rates, and Analysis of Mortality during 1909 in England and Wales, the 76 Great Towns of England and Wales, and the corresponding figures for Ipswich.

	Birth-Rate.	Death-Rate.		Principal Epidemic Diseases, Cols. 5-11.	Small Pox.	Measles.	Scarlet Fever.	Diph-theria.	Whooping Coughs.	Fever.	Diarrhœa.	Deaths under 1 year per 1000 Births.
		Crude.	Corrected.									
Column ...	1	2	3	4	5	6	7	8	9	10	11	12
England & Wales	25·6	14·5	14·5	1·12	0·00	0·35	0·09	0·14	0·20	0·06	0·28	109
76 Great Towns	25·7	14·7	15·6	1·42	0·00	0·48	0·11	0·15	0·24	0·06	0·38	118
Ipswich ...	23·9	13·8	12·8	0·84	0·00	0·22	0·05	0·10	0·20	0·04	0·22	89
143 Smaller Towns	24·8	13·9	14·5	1·08	0·00	0·33	0·09	0·16	0·17	0·06	0·27	111
England & Wales less the 219 Towns	25·6	14·5	13·6	0·80	0·00	0·21	0·06	0·14	0·16	0·06	0·17	98

The following Comparative Table of the Birth-rates, Death-rates from all causes, and from certain principal groups of causes of death, shows that out of the 26 towns in the Table, 9 had a lower Birth-rate than Ipswich, 8 a lower Death-rate from all causes, 5 a lower Infantile Mortality rate, 8 a lower Zymotic, 6 a lower Respiratory rate, 17 a lower Phthisis rate, and 24 a lower Cancer rate. With the exception of phthisis and cancer, the position of Ipswich compares favourably with that of the other towns compared in the Table.

TOWN.	Population.	Birth-rate per 1,000 living.	Death-rate (nett) per 1,000 living.	Infantile Death-rate.	Zymotic Death-rate.	Respiratory Death-rate.	Phthisis Death-rate.	Death-rate Other Tuber'ls Diseases.	Cancer Death-rate.	Average Death-rate 10 years 1899 to 1908.	No.
Handsworth ...	71,935	20·2	10·2	83	1·05	1·66	0·58	0·35	0·70	11·5	1
Kings Norton ...	81,632	22·3	10·34	73	1·0	1·9	0·6	0·2	0·8	11 0	2
York	87,000	23 7	11·4	100	0·52	1·73	1·03	0·29	0·84	15·7	3
Smethwick ...	70,300	28·1	11·5	116	2·23	0·28	0·82	0·38	0·78	13·1	4
Barrow ...	66,951	24·7	11·63	80	0·72	1·09	1·21	0 47	0·68	14·1	5
Wallassey ...	73,000	25·1	12·0	80	0·7	2·2	0·8	0·4	1·0	14·9	6
Burton-on-Trent	53,500	22·6	12·3	100	0·45	1·79	1·21	0·46	0·74	..	7
Hastings ...	68,165	15 3	12·4	76	0·32	1·83	1·11	0·28	1·45	13·54	8
Ipswich ...	74,889	23·9	13·2	89	0·84	1·97	1·12	0·53	1·31	15·8	9
Northampton ...	94,500	20·71	13·69	109	0·88	2·43	1·25	0·40	1·04	13·4	10
Coventry ...	93,500	27·8	13·7	96	1·6	2·41	1·03	0·39	0 69	15 2	11
Aston Manor ...	85,257	23·9	13·9	120	1·7	2·8	1·10	0 2	0·7	14·9	12
Carlisle ..	50,675	22·6	13·9	125	0·50	2·3	1·26	0·3	1·1	16·5	13
Stockton-on-Tees	53,660	26·4	14·03	121	1·24	2·12	0·83	1 13	0·78	17·9	14
Rotherham ..	65,000	31·7	14·08	116	1·04	2·54	0·69	0·34	0·67	16·3	15
Newport ..	78,336	32·06	15·1	113	2·37	2·73	1·04	0·31	0 81	16 5	16
Bootle	71,500	29·9	16·0	118	2·1	3·4	1·10	0·29	0·88	18 7	17
Rochdale ...	89,654	23	16·1	101	0·64	3·05	1·07	0·31	1·09	20·0	18
Bury	95,234	20·6	16·29	129	0·98	3·85	1·19	0·33	0·96	17 07	19
Huddersfield ...	94,700	24·5	16·30	96	1·05	2·78	1·08	0·45	1·19	17·31	20
Warrington ...	73,008	30 9	16·9	129	2·9	3·45	1·15	0·64	0·63	18·5	21
Tynemouth ...	55,808	33·5	17·1	127	1·27	2·7	1·14	0·70	0·5	19·0	22
Swansea ...	108,110	30·6	18·0	155	1·90	3·07	1·68	0·24	0·86	17·4	23
Wigan ...	93,262	30·6	18·28	169	2·47	4·90	0·72	0·58	0·51	20 02	24
Hanley ...	68,831	31·3	18·4	149	2·15	..	0·9	..	..	19·1	25
St. Helens ...	95,161	32·05	18·5	149	3·5	3·6	1·02	0·73	0·46	18·9	26

TABLE I.

Vital Statistics of whole District during 1909 and previous Year.

Year.	Population estimated to Middle of each Year.	Births.		Total Deaths Registered in the District.				Total Deaths in Public Institutions in the District.	Deaths of Non-Residents registered in Public Institutions in the District.	Deaths of Residents registered in Public Institutions beyond the District.	Nett Deaths at all Ages belonging to the District.	
				Under 1 Year of Age.		At all Ages.						
		No.	Rate.	No.	Rate per 1,000 Births registered.	No.	Rate.				No.	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1899	64533	1785	27·5	333	186	1248	19·2	184	49	—	1199	18·5
1900	65587	1800	27·3	280	155	1276	19·4	208	55	—	1221	18·6
1901	66630	1902	28·5	333	175	1248	18·7	202	62	—	1186	17·8
1902	67840	1894	27·9	222	118	1026	15·0	213	53	—	973	14·2
1903	68818	1956	28·4	274	140	1110	16·1	204	57	—	1053	15·3
1904	69805	1925	27·5	271	140	1159	16·6	221	75	—	1084	15·5
1905	70802	1955	27·6	287	146	1089	15·3	195	52	—	1037	14·6
1906	71809	1909	26·5	274	144	1129	15·7	215	56	1	1074	14·9
1907	72825	1850	25·4	197	106	1147	15·7	218	58	1	1090	14·9
1908	73852	1808	24·4	200	110	1095	14·8	203	36	1	1059	14·3
Averages for years 1899-1908	69250	1878	27·1	267	142	1152	16·6	206	55	0·3	1097	15·8
1909	74889	1792	23·9	162	89	1035	13·8	215	44	3	991	13·2

TABLE II.

Vital Statistics of Separate Localities in 1908 and 1909.

(1) St. Margaret's Ward—	1908.	1909.
Population estimated to middle of each year	19,417	19,751
Births registered	434	446
Deaths at all ages	220	185
Deaths under 1 year	33	26
(2) St. Clement's Ward—		
Population estimated to middle of each year	15,301	15,573
Births registered	386	367
Deaths at all ages	185	150
Deaths under 1 year	51	27
(3) Middle Ward—		
Population estimated to middle of each year	7,562	7,667
Births registered	224	237
Deaths at all ages	92	122
Deaths under 1 year	22	32
(4) Bridge Ward—		
Population estimated to middle of each year	13,908	14,025
Births registered	321	315
Deaths at all ages	167	160
Deaths under 1 year	35	32
(5) Westgate Ward—		
Population estimated to middle of each year	17,664	17,873
Births registered	443	427
Deaths at all ages	227	200
Deaths under 1 year	48	39

TABLE III.

Cases of Infectious Disease notified during the Year 1909.

Notifiable Disease.	Cases Notified in whole District.							Total cases Notified in each Locality.					No. of cases Removed to Hospital from each Locality.					
	At all Ages.	At Ages—Years.																
		Under 1	1 to 5	5 to 15	15 to 25	25 to 65	65 and upwards	St. Margaret's 1	St. Clement's 2	Middle 3	Bridge 4	Westgate 5	St. Margaret's 1	St. Clement's 2	Middle 3	Bridge 4	Westgate 5	Total cases removed to Hospital
Small-pox ...	...	...	...	..	...	..	...	...	...	...	...	...	...	...	..	...	...	...
Cholera	...	...	...	...	...	..	...	...	...	...	...	...	...	..	...	...	..	...
Diphtheria (including Membranous crop)	66	...	19	41	2	4	...	15	8	7	16	20	10	8	5	10	17	50
Erysipelas ...	33		Ages	not tak	en		..	10	7	4	8	4		None	Remov	ed		..
Scarlet Fever ..	100	1	20	69	7	3	...	50	25	7	5	13	49	24	6	5	7	91
Typhus Fever ...	...	...	...	...	8	7	...	...	...	...	...	...	...		...	...	...	...
Enteric Fever ...	15	...	...	...	...	...	...	3	5	2	5	...	2	5	1	5	5	13
Relapsing Fever ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...
Continued Fever ...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...
Puerperal Fever ...	2	...	...	...	1	1	...	2	...	...	...	...	...	None	Remov	ed	...	...
Plague	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...
Totals	216	1	39	110	18	15	...	80	45	20	34	37	61	37	12	20	24	154

TABLE IV.

Causes of, and Ages at, Death during Year, 1909.

Causes of Death. 1	Deaths at the subjoined ages of "Residents" whether occurring in or beyond the District.							Total Deaths whether of "Residents" or "Non-Residents" in Public Institutions in the District. 9
	All ages. 2	Under 1 year. 3	1 and under 5. 4	5 and under 15. 5	15 and under 25. 6	25 and under 65. 7	65 and up-wards. 8	
Small Pox	..	..	..	..	..	..	..	..
Measles	17	2	11	4	..	..	..	..
Scarlet Fever	4	..	2	2	..	..	..	4
Whooping-cough	15	2	12	1	..	..	..	..
Diphtheria (including Membranous Croup ..	8	..	3	4	..	1	..	3
Croup	..	..	..	..	..	..	..	..
Fever: Typhus	..	..	..	..	..	..	..	..
Fever: Enteric	3	..	..	..	..	3	..	2
Fever: Other continued ..	..	..	..	..	..	..	..	..
Epidemic Influenza ..	11	2	1	..	1	3	4	1
Cholera	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..
Diarrhœa	10	3	3	..	..	2	2	..
Enteritis	5	5	..	..	..	..	..	..
Gastritis	1	1	..	..	..	..	..	..
Puerperal Fever	..	..	..	..	..	..	..	..
Erysipelas	1	..	..	..	..	1	..	1
Phthisis (Pulmonary Tuberculosis)	84	..	..	3	10	67	4	22
Other Tuberculous Diseases ..	40	3	16	6	6	8	1	12
Cancer, malignant disease ..	99	..	..	..	..	59	40	20
Bronchitis	62	17	4	..	1	6	34	3
Pneumonia	67	12	16	1	1	26	11	12
Pleurisy	1	..	..	..	..	1	..	1
Other diseases of Respiratory Organs	18	1	4	..	..	7	6	2
Alcoholism (Cirrhosis of Liver)	8	..	..	..	..	7	1	..
Venereal diseases	7	6	..	..	..	1	..	1
Premature Birth	31	30	1	..	..	..	..	..
Diseases and Accidents of Parturition	4	..	..	..	..	4	..	..
Heart diseases	81	1	1	..	4	35	40	23
Accidents	28	6	4	3	..	8	7	10
Suicides	10	..	..	..	..	8	2	1
All other causes	377	71	12	8	11	105	169	97
All causes	991	162	90	32	34	352	321	215

TABLE V.

INFANTILE MORTALITY DURING THE YEAR 1909.

	Cause of Death	Under 1 day.	Under 2 days.	Under 3 days.	Under 4 days.	Under 5 days.	Under 6 days.	Under 7 days.	Under 1 week	1-2 weeks	2-3 weeks.	3-4 weeks.	Total under 1 month.	1-2 months.	2-3 months.	3-4 months.	4-5 months.	5-6 months.	6-7 months.	7-8 months.	8-9 months.	9-10 months.	10-11 months.	11-12 months.	Total Deaths under One Year.
All Causes.	Certified	All.																							
	Uncertified	None.																							
I. Common Infectious Diseases.	Small-pox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Chicken-pox	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Measles	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Scarlet Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	2
	Diphtheria (including Membranous Croup)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Whooping Cough	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	2
II. Diarrhœal Diseases.	Diarrhœa, all forms	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	2
	Enteritis, Muco-enteritis, Gastro-enteritis	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	..	..	1	1	..	1	..	..	6
	Gastritis, Gastro-intestinal Catarrh	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1
III. Wasting Diseases.	Premature Birth	11	2	2	1	3	..	1	20	6	2	..	28	1	1	..	..	..	..	..	..	..	..	..	30
	Congenital Defects	2	..	2	1	..	1	..	6	2	..	..	8	1	..	1	1	..	1	..	..	..	..	..	12
	Injury at Birth	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Want of Breast-milk, Starvation	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Atrophy, Debility, Marasmus	2	2	3	1	3	2	1	14	4	3	7	28	5	2	1	1	1	..	..	1	3	..	..	42
IV. Tuberculosis Diseases.	Tuberculous Meningitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Tuberculous Peritonitis: Tabes Mesenterica	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Other Tuberculous Diseases	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	1	3
V. Other Causes.	Erysipelas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Syphilis	..	..	..	..	..	..	..	..	1	..	..	1	2	..	..	..	2	..	1	..	..	..	..	6
	Rickets	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Meningitis (*not Tuberculous*)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1
	Convulsions	..	..	..	3	..	..	..	3	2	..	1	6	..	..	..	..	..	1	3	2	..	..	..	12
	Bronchitis	..	..	..	..	..	..	..	..	..	..	1	1	3	1	..	1	1	..	..	1	1	4	4	17
	Laryngitis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Pneumonia	..	..	..	..	..	..	..	..	..	1	..	1	..	1	1	..	3	3	1	1	..	..	1	12
	Suffocation, overlying	..	..	..	..	..	..	..	..	1	..	..	1	1	1	1	..	..	1	..	..	..	..	..	5
	Other causes	..	..	..	..	..	..	..	1	..	..	..	1	2	..	1	1	1	..	..	1	..	1	1	9
	TOTAL	15	4	7	6	7	3	2	44	16	6	9	75	16	6	8	4	9	8	8	9	7	5	7	162

BOROUGH OF IPSWICH.

Report of Sanitary Inspector, Inspector under Sale of Food and Drugs Act, Inspector of Butter Factories, Inspector of Common Lodging Houses, Inspector under the Dairies, Cowsheds, and Milkshops Orders, and Inspector under the Contagious Diseases (Animals) Act for the year ending December 31st, 1909.

Number of complaints	267
Number of visits to houses, &c.... ...	6338

Synopsis of Inspections.

Letters issued	529
Preliminary Notices served	303
Statutory Notices served	6
Drains re-constructed	176
Drains cleansed and trapped	137
Drains tested (complete or in part) ...	233
Gullies, &c., fixed	105
New sinks and wastes	153
Dead wells filled in	18
New W.C.'s provided	65
Defective W.C. pans	46
Foul W.C.'s	39
Water laid on to W.C.'s	15

Synopsis of Inspections (contd).

Privies done away with	21
Pail closets done away with	2
New privies built	1
Privies repaired	22
Urinals repaired or cleansed	3
New urinals	4
Houses closed as unfit for habitation	21
Houses in a dirty state	79
Want of general repairs to houses	148
Overcrowding	5
Rooms ventilated	212
Damp houses	52
Defective eaves troughing	40
Paving to yards and sculleries	297
Washhouses repaired, &c.	50
Premises limewashed	309
Removals of animals	83
Removal of manure, &c.	54
Manure bins repaired	7
Ash receptacles provided	27
Offensive trades	1
Smoke Nuisances	1
Visits to Slaughter Houses	758
Food seized—	
Meat	1448 lbs.
Fish	549½ lbs.
Potatoes	2240 lbs.
Killing on unlicensed premises	1

Synopsis of Inspections (contd).

Bakehouses	305
Butter Factory	3
Cowsheds	21
Purveyors of Milk	75
Removals of Infectious Diseases ...	154
Enquiries *re* Infectious Diseases ...	348
Common Lodging Houses	35
Visits under Contagious Diseases (Animals) Act	25
Legal Proceedings	9
Miscellaneous	2188

Infectious Diseases.

Number of cases removed to Hospital ...	154
Number of enquiries made *re* notified cases of Infectious Diseases	225
Number of enquiries *re* Phthisis ...	123

Disinfecting.

Rooms disinfected after notifiable Infectious Diseases	256
Rooms disinfected after Phthisis ...	123
Rooms disinfected after Cancer ...	6
Articles of Bedding, Clothing, &c., disinfected in Steam Disinfector at Isolation Hospital	4347
Articles of Bedding, Clothing, &c., burnt ...	53
Council and Voluntary Schools, Class-rooms disinfected	9

The Ambulance Brougham and Bedding Van have been disinfected after removals.

Mortuary.

Twenty-nine bodies were removed to the Mortuary, viz., 17 males and 12 females.

Water Supply.

Samples taken from Corporation supplies for Chemical examination	31
Samples taken from private supplies ...	5

Three of the samples taken from private supplies were examined by the Medical Officer of Health.

Butter Factory.

The Butter Factory was visited three times during the year, and on each occasion was found satisfactory.

Bakehouses.

There are now 100 Bakehouses in the Borough.

Notices served for structural alterations, cleansing, &c., 63.

One bakehouse was pulled down and rebuilt.

One new bakehouse built.

One of the underground bakehouses has not been in occupation during the year as a bakehouse, therefore I would suggest that the certificate for same be withdrawn if possible.

Number of visits, 305.

Slaughter Houses.

There were 26 Slaughter Houses and one knacker's yard in the Borough.

One slaughter house was pulled down at the close of the year.

Notices served for structural alterations, cleansing, &c., 4.

Number of visits, 758.

Common Lodging Houses.

Only seven of the eight registered Common Lodging Houses have been in occupation during the year.

These have been kept in a satisfactory state.

The occupier of the eighth was refused registration at the commencement of the year.

Notices served for structural alterations, cleansing, &c., 4.

Number of visits, 35.

Public Lavatories and Urinals.

There are now 13 Public Urinals and 7 w.c.'s for males; also one Ladies' Cloak Room, with two w.c.'s. and one w.c. Murray Road Recreation Ground for females.

All the public conveniences in the Borough have been cleansed daily by one of the staff from this Department.

On July 1st, 1909, the new Public Conveniences, Lion Street, were opened to the public; the Men's Department consist of eleven bays, two w.c.'s, and three lavatory basins; and the female's, two w.c.'s, two lavatory basins, and toilet table. All these were fairly used during the year. In the men's department, it was found that the w.c. accommodation was insufficient on certain nights of the week, viz., Friday and Saturday. This was reported to the Public Health Committee with the result that two more w.c.'s were built. At the opening of these lavatories the charge for wash and brush up was one penny; this was found to be insufficient to cover the cost of water, gas, washing, &c., therefore the Committee decided to raise the charge to three-half-pence.

Three bad coins were put in the slots. Three two-shilling pieces were found in the slots; the change for one was returned to owner, but in two cases the owner was not known; therefore these were paid into the Borough Accountant's with the week's takings.

The accommodation in Ladies' Cloak Room is much taxed on Friday and Saturday nights, and I feel the time is not far distant when further w.c.'s will have to be provided.

Dairies, Cowsheds, and Milk Shops Orders.

Number of Purveyors of Milk on the Register at end of year	124
Purveyors have been Registered ...	22
Purveyors have given up	8
Visits to Purveyors premises	75
Number of Cowkeepers on Register was at end of year	32
Two Cowkeepers have been Registered ...	2

The Cowsheds, so far as they have been inspected, were kept as well as could be expected. Many of the structures do not comply with the Regulations for Cowsheds.

Visits to Cowsheds	21

Contagious Diseases (Animals) Act.

Two cases of Anthrax were dealt with during the year, the carcases being burnt at Handford Hall. The premises were cleansed and disinfected.

The cost of destruction was £3 13s. 3d.

Three premises were dealt with under the Swine Fever Order, affecting 42 pigs. The usual cleansing and disinfecting was carried out.

Visits under the Act 25.

Sale of Food and Drugs Act.

One-hundred-and-eighty-six samples were taken by the Inspector during the year, as compared with 49, 70, 82, 176 and 191 in the five preceding years.

The following Table shows the number of Samples taken during the year, together with the number adultered or otherwise unsatisfactory, and the results of action :—

Article.	No. of Samples.	No. of Unsatisfactory Samples.	No. of Prosecutions.	No. of Convictions.	Dismissed.	Fines and Costs.
Milk ...	123	15	8	6	2	£6 10 6
Butter ...	18	—	—	—	—	
Margarine ...	4	—	—	—	—	
Cheese ...	3	—	—	—	—	
Coffee ...	3	—	—	—	—	
Bread and Butter	6	—	—	—	—	
Prescriptions ...	2	—	—	—	—	
Aeriated Water ...	3	—	—	—	—	
Condensed Milk	10	—	—	—	—	
Packet Peas ...	2	—	—	—	—	
Golden Syrup ...	2	1	1	1	—	1 18 6
Mustard ..	5	—	—	—	—	
Pork Cheese ...	1	—	—	—	—	
Lard ...	4	—	—	—	—	
Total ...	186	16	9	7	2	8 9 0

Of the 15 samples of unsatisfactory milk, 8 were of the lowest quality, 7 contained added water, and 2 contained a preservative.

Of the 123 samples of milk, 55 were taken at shops, 66 on rounds, 2 in course of delivery, and 3 informal samples.

One prosecution was taken for not being registered (fine 5/-, including costs), and one for obstruction (fine 10/6, including costs).

A. HICKS,
Sanitary Inspector.

Report of the Manager of the House Refuse Removal and Night Soil Department, for the Year 1909.

GENTLEMEN,

I beg to submit the following Report for the year :—

Dry Refuse Department.

Fourteen dust carts and three vans were collecting throughout the year.

During the last three months I have added another cart, four days per week at present, but, on and after April 1st, 1910, the staff will consist of fifteen carts and four vans.

Number of calls during the year, 1,042,743.
Van and cart loads, 15,604.
Approximate weight of same, 12,237 tons.
Daily collection at close of year, about 42 tons.
Number of loads of tradesmen's shop refuse, and other refuse, delivered to the destructor during the year, of varying sizes, was 1,764
Weight of same, approximately 70 tons.

	£	s.	d.
Sale of decomposed refuse from the accumulation at Handford Hall Farm, which, I am glad to say, is now all disposed of	3	3	0
Received for the removal of refuse other than house refuse from different premises	1	6	6
	£4	9	6

Summary of Expenses.

	£	s.	d.
Wages	1272	16	2
Horse Keep	889	0	0
Renewals and Repairs	289	1	1
Rent of Land at Handford Hall for House Refuse	1	0	0
Two New Horses	87	0	0
	2538	17	3
Credit Receipts ...	4	9	6
Nett Cost ...	£2534	7	9
Manager's Estimate ...	2600	0	0
Nett Cost	2534	7	9
Balance ...	£65	2	7

Night Soil Department.

This department has been worked throughout the year by a staff of four men and two horses, averaging rather under three nights per week.

At the present time there are 90 middens still remaining in the Borough, as under :—

39 at Whitton, 6 Whitton Road Terrace, 17 Roshers Cottage, 7 Knights Dales, 4 Helena Road, 2 Bramford Road, 2 Providence Lane, 2 Fore Hamlet, 11 Samuel Road, and 6 pails, New Cut East, which are emptied weekly.

192 waggon loads have been collected during the year, 62 of these have been sold to farmers. 130 taken to Handford Hall and debited to the Farm account. 194 emptyings of middens were attended to in twelve months. 286 empyings of pails. 75 tubs and pits were emptied and charged for. 25 dead wells were emptied and charged for.

Sales and Earnings.

		£	s.	d.
131 waggons to Handford Hall,	at 4/-	26	0	0
32 ,, ,, Mr. Turner	,, 2/6	4	0	0
8 ,, ,, Mr. Lait	,, 3/6	1	8	0
22 ,, ,, ,, ,,	,, 3/-	3	3	0
24 dead wells ...	...	14	18	0
75 tubs and pits ...	...	12	6	0
		£61	15	0

Summary of Expenses.

	£	s.	d.
Wages	139	9	3
Horse Keep	88	8	0
Repairs and Shoeing ...	16	16	2
	244	13	5
Credit Sales	61	15	0
Nett Cost	£182	18	5
Manager's Estimate	200	0	0
Nett Cost ...	182	18	5
Balance	£17	1	7

I am, Gentlemen,
Your obedient Servant,
GEO. MOSS,
Manager.

Handford Hall,
Ipswich.

THE MEDICAL INSPECTION OF SCHOOL CHILDREN.

During 1909 the Inspection of School Children was carried out in the following manner :—

(1) Inspection of all admissions.

(2) Inspection at 5 years of age. As many children are admitted at 5 years of age, it is clear that this group will include many admissions.

(3) Inspection at 9 years of age. This is an addition to the groups inspected during 1908.

(4) Inspection at 13 years of age. This age period was selected because it would replace the inspection on leaving school.

The vast majority of the children leave school between 13 and 14 years of age, and thus it is unlikely that any will be missed.

(5) At each visit to each school it is expected that each Head Teacher will bring up for examination any child who may appear to require examination for any reason.

(6) In addition, the teachers are expected to send to the office of the Medical Officer of Health, any child who appears to them to require examination or exclusion from school, for any reason This procedure is largely adopted and is of great benefit, especially in connection with infectious diseases, such as ringworm, scabies, pediculosis, etc.

It is clear that inspection at fixed age periods involves frequent attendances at the schools, since it is necessary to get the children at, or within a few days of, their reaching the prescribed age. In order to accomplish this end it was found necessary to arrange a time table of inspections so that each school should receive its due share of attention. The principle which underlay the framing of the time table was, that the largest schools should receive the greatest number of visits. As a result a time table was drawn up in such a manner as to secure that the large schools are visited every three weeks and the smaller schools every six weeks.

It thus arises that each school is in constant touch with the Medical Inspector.

By the adoption of this system the work of the Inspector in the schools is greatly facilitated, since the teachers are prepared for the inspection, and at each visit it is possible to arrange for the children who are to be inspected at the next visit.

The actual work of inspection in the schools is carried out as follows :—

(1) The Medical Inspector and the Nurse visit each school in the order laid down in the Time Table.

The children due for inspection on this date are inspected, the School Nurse assisting in the work by preparing the children for inspection, taking the heights and weights, and entering particulars as to any other points on the cards during the actual inspection.

(2) The children are examined by the Medical Inspector, who directs the entries of the facts elucidated by the examination in cards of the form approved by the Education Board, supplies of which are kept at each school. Any points that the teachers can supply are noted at the same time.

(3) After the inspection of the children ready on the particular date it is the duty of the School Nurse to arrange for the children who will have matured for the next examination, to be present, accompanied by one or both parents. For this purpose she has recourse to the School Register in order to discover what children have attained the ages at which inspection takes place, and also whether there are any admissions not yet inspected.

Having obtained these particulars, she then makes out notices which are sent to the parents of these children, stating that the child will be examined at the next inspection and requesting the parents to be present on that date. The result of this is that very little work is thrown on the teachers, practically the whole of the work being done by the Nurse.

The cards are kept at the schools. When a child has been inspected at the age of, say, 5 years, the card with the particulars duly entered, is transferred to the box for the cards of children at 9 years of age, which is the next time that the child will be inspected unless something exceptional occurs in the meantime. In this case it is a simple matter to find the card.

(4) In order that the work may be kept up to date, a series of forms are kept in the office of the Medical Officer of Health arranged so that there is one form for each age period for each school. The cards are brought away from each school after each inspection and the results of inspection entered on these forms daily. The cards are then returned to the school on the occasion of the next visit.

It may at once be stated that this method of inspection has worked well up to the present, and there appears to be no reason why it should not continue to act equally well in the future.

Experience of Medical Inspection has shown that while great good may be expected from the routine inspections, nevertheless there are many conditions which require special and detailed investigation.

Examples of these conditions are—enquiries into the mental condition with a view to determining the capacity to receive education, and the advantages or disadvantages of education along with other children of normal mental development.

At the present time a detailed enquiry is being conducted into this particular matter and the results will be published in due course. Obviously this enquiry is supplemental to the ordinary routine work.

Again, in the case of pediculosis, a special inspection was made of the children attending the girls' and infants' departments of the schools. This inspection was repeated at a later date and the results are set forth in the Table on the subject.

As time goes on it will be possible, by means of these supplemental inspections, specially designed for specific purposes, to arrive at an accurate view of the exact condition of all the children in the schools. It will then be possible to keep the information up to date by means of the routine inspections, and by the examination of children specially brought forward.

All these procedures will take time to develop, but it may be stated that the steps now being taken are designed to secure the result.

The following series of Tables show the results of the routine inspection in the schools during 1909 :—

TABLE I.

This Table shows the total number of children inspected in the schools during the year 1909.

The children are referred to the groups to which they belong for the purposes of medical inspection.

The group of admissions includes all children admitted to school from outside the Borough, and many children who for various reasons, such as illness, were not examined at the definite age periods.

The great majority of the 5 year old group are also admissions as this is a favourite age for admission to school.

The group of infants includes all children admitted to school under 5 years of age. I consider that the detailed examination of such very young children serves no useful purpose. This group will not be included in any of the subsequent Tables.

Sex.	Admissions.	Infants.	5 years of age.	9 years of age.	13 years of age.	Totals.
Males	352	340	449	542	257	1940
Females	354	360	413	570	250	1947
Totals	706	700	862	1112	507	3887

TABLE II.

This Table summarises the proportions of normal and defective children at each age period.

Sex	Admissions.				5 years of age.				9 years of age.				13 years of age.				Total all ages.			
	Normal.		Defective.		Normal.		Defective.		Normal.		Defective.		Normal.		Defective.		Normal.		Defective.	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Males	192	54	160	46	314	70	135	30	314	58	228	42	157	61	100	39	977	56	773	44
Females	180	50	174	50	251	61	162	39	250	44	320	56	92	37	158	63	623	43	814	57
Total	372	52	334	48	565	65	297	35	564	51	548	48	249	49	258	51	1750	55	1437	45
	706				862				1112				507				3187			

The children at 5 years of age therefore showed a far lower percentage of defect than at the other two accurate age periods.

In so far as the totals are concerned males showed a smaller percentage of defects than females.

The percentage of defects discovered amongst females increased with the age in a very marked degree.

The principal reason for the higher percentage of defect amongst females was the large excess of pediculosis, as compared with boys. This excess was evident at each of the three age periods.

It may at once be stated that the gravity of the defects discovered bore no proportion to their number. In many cases the defects were extremely slight.

Clothing and Cleanliness.

Observations as to the clothing of children show that, as a routine procedure, the facts collected are not worth the trouble of tabulating, for the simple reason that the children come specially prepared for inspection, and therefore evidence as to the normal state of the clothing and personal cleanliness as a matter of habit is conspicuous by its absence.

The only evidence which is of the least value occurs in the cases where the children are badly clothed at the time of inspection, since the fact reveals either extreme poverty on the part of the parents or utter carelesness in the matter.

Of 3187 children inspected in 1909, 78 were badly clothed. Of these, 53 were boys and 25 girls, percentages respectively of 3·3% and 1·6%, or a percentage for both sexes of 2·4%.

In the case of 244 children, the clothing was described as fair. This was in the proportion of 8% of the children examined. Of these 132 or 8.2% were boys, and 123 or 7·7% girls.

The information derived from the figures, with reference to cleanliness, shows that the children had been specially cleaned for inspection, and therefore are of no value as an index of the normal condition of the child.

HEIGHTS AND WEIGHTS.

The following Table shows the Heights and Weights of the children examined, with the exception of the admissions. As already indicated, the admissions constitute an indeterminate age group, and the experience of the previous year clearly indicated that the information given by this group corroborates, but in no way modifies, the information given by the fixed age groups.

Height in Inches.

	Average in Inches.	Above Normal.		Below Normal.		Normal.		Total.	
		No.	%	No.	%	No.	%	Standard Height.	No.
		Age Period, 13 Years.							
Male ..	55·2	102	39·6	137	53·4	18	7	56	257
Female ..	56·4	94	37·6	130	52·0	26	10·4	57·2	250
Total ..	55·8	196	38·6	267	52·7	44	8·7	..	507
		Age Period, 9 Years.							
Male ..	48·3	265	48·9	233	43	44	8·1	48·4	542
Female ..	48·3	310	54·4	214	37·5	46	8·1	47·6	570
Total ..	48·3	575	51·6	447	40·3	90	8·1	..	1112
		Age Period, 5 Years.							
Male ..	39·7	237	52·8	165	36·8	47	10·4	39·7	449
Female ..	39·6	185	44·8	178	43·1	50	12·1	39·4	413
Total ..	39·7	422	48·8	343	40	97	11·2	..	862
	Total, all Age Periods, except Admissions.								
Male ..	..	604	48·4	535	42·8	109	8·8	..	1248
Female ..	..	589	47·7	522	42·3	122	10·0	..	1233
Total ..	..	1193	48·0	1057	42·5	231	9·4	..	2481

Thus 60% of the Ipswich children are either normal or above normal in height at 5 years of age. At 9 years of age, 59·7% are normal or above normal in height. At 13 years of age, on the other hand, the growth in height does not appear to be at the same rate as that of the children who provided the Anthropological Standard, since only 47·3% were normal or above normal. These results confirm the observations made during the previous year.

Weight in Pounds.

Sex.	Average in lbs.	Normal.		Above Normal.		Below Normal.		Standard Weight.	Total.
		No.	°/o	No	°/o	No.	°/o		
		Age Period 13 Years.							
Males ..	73·0	12	4·6	63	24·5	182	70·9	79·6	257
Females ..	77·8	13	5·2	71	28·4	166	66·4	81·8	250
Total ..	75·4	25	4·9	134	26·5	348	68·6	...	507
		Age Period 9 Years.							
Males ..	52·3	46	8·5	103	19	393	72·5	57·6	542
Females ..	51·0	44	7·8	174	30·5	352	61·7	53·8	570
Total ..	51·6	90	8·2	277	24·7	745	67·1	..	1112
		Age Period 5 Years.							
Males ..	37·4	52	11·6	134	29·8	263	58·6	38·6	449
Females ..	35·8	37	9·0	109	26·4	267	64·6	37·6	413
Total ..	36·6	89	10·3	243	28·1	530	61·6	...	862
Total of all Age Periods except Admissions.									
Males ..	...	110	8·8	300	24·0	838	67·2	...	1248
Females ..	...	94	7·6	354	28·7	885	63·7	...	1233
Total ..	...	204	8·2	654	26·3	1623	65·5	...	2481

Thus at all ages the weights of the children were below the anthropological standard, particularly so in the case of the boys at 9 and 13 years of age. The boys at 5 years of age were not below the standard to nearly the same degree. It would appear, therefore, that the boys lose proportionate weight as they increase in age. In the case of girls, the difference at each age period is not so marked, although the worst period appears to be at 13 years of age.

NUTRITION.

The determination of the question of nutrition is one into which the personal element of the Inspector enters in a very large degree. The results recorded, therefore, must be considered as somewhat indefinite, although there is little doubt that practically all observers would agree as to what constituted good nutrition or bad nutrition. It may be assumed, therefore, that the numbers referred to these two groups are reasonably accurate.

	Very Good		Normal.		Fair.		Bad.		Totals.
	No.	°/o	No.	°/o	No	°/o	No	°/o	
Age Period 13 Years.									
Male ...	13	5·0	196	76·3	41	16·0	7	2·7	257
Female	24	9 6	192	76·8	28	11·0	6	2·4	250
Total	37	7·3	388	76·5	69	13·6	13	2·6	507
Age Period 9 Years.									
Male ...	26	4·8	361	66·6	136	25·1	19	3·5	542
Female	28	5·0	352	61·7	169	29·6	21	3·7	570
Total	54	4·9	713	64·1	305	27·4	40	3·6	1112
Age Period 5 Years.									
Male ...	30	6·7	317	70·6	90	20·0	12	2·7	449
Female	16	3·9	267	64·6	112	27·1	18	4·4	413
Total	46	5·3	584	67·6	202	23·5	30	3·6	862
Admissions.									
Male ...	24	6·8	248	70·4	66	18·7	14	3·9	352
Female	18	5·0	255	72·0	72	20·3	9	2·5	354
Total	42	5·9	503	71·2	138	19·5	23	3·2	706
Total all Children Examined.									
Male ...	93	5·8	1112	70·1	333	20·8	52	3·2	1600
Female	86	5·3	1066	67·1	381	24·0	54	3·4	1587
Total	179	5·6	2188	68·6	714	22·4	106	3·3	3187

These figures show that only 3·3 % of all the children examined showed bad nutrition. This represents about 400 out of a total of 12,000 children in attendance at school.

The best nutrition was displayed by the 13 year olds and the next best by the 5 year olds. On the whole the boys were better than the girls, the greatest discrepancy being at 5 years of age.

Great care must be exercised in drawing conclusions from nutrition results, since it by no means follows that a child which shows bad nutrition is underfed. In many cases, though no fault can be found with the feeding, yet the child shows bad nutrition.

There is evidence that a certain proportion of these children are not properly fed, and the error in feeding exhibits itself along two main lines :—

(1) Insufficiency in the amount of food supplied.

(2) The food is sufficient in amount, but deficient in quality.

I am of opinion that the voluntary scheme in force in the Borough is sufficient to meet the requirements of the case.

TEETH.

The following Table exhibits the results of examination of the teeth.

Sex.	Good.		Damaged.		Bad.		Totals.
	No.	°/o	No.	°/o	No.	°/o	
	Age Period 13 Years.						
Male ...	90	35	147	57·2	20	7·8	257
Female	85	34	148	59·2	17	6·8	250
Total	175	34·5	295	58·2	37	7·3	507
	Age Period 9 Years.						
Male ...	174	32·1	318	58·7	50	9·2	542
Female	186	32·6	323	56·7	61	10·7	570
Total	360	32·3	641	57·7	111	10·0	1112
	Age Period 5 Years.						
Male ...	246	54·6	175	39	28	6·2	449
Female	214	51·8	169	41	30	7·2	413
Total	460	53·2	344	40	58	6·7	862
	Admissions.						
Male ...	129	36·6	188	53·4	35	9·9	352
Female	137	38·7	188	53·1	29	8·1	354
Total	266	37·6	376	53·2	64	9·0	706
	Total all Groups.						
Male ...	639	39·8	828	51·7	133	8·3	1600
Female	622	39·2	828	52·1	137	8·6	1587
Total	1261	39·5	1656	51·9	270	8·4	3187

Teeth are considered to be "good" where there is no evidence of active decay. "Dead" temporary teeth are not taken into consideration.

The teeth are classified as "medium" where the decay is confined to four or less than four, and where the degree of decay is not extensive.

The teeth are classified as bad in all other cases.

In cases, however, where three or four teeth are extensively decayed, they are included in this group.

It may at once be stated that a perfect set of teeth is non-existent.

Decayed teeth are produced by the decomposition of food stuffs in the interstices between the teeth. Hence constant cleaning is requisite in order to remove decomposable matter before decomposition has set in. It is the fact, however, that this procedure is considered quite unnecessary amongst the children attending Public Elementary Schools, amongst whom the possession of a tooth brush is a practically unknown luxury. Yet there is probably no condition more productive of injury to health than the possession of a mouthful of more or less decayed teeth.

GLANDULAR ENLARGEMENTS.

The results of examinations of the Cervical and Submaxillary Glands was as follows :—In only 5 cases out of 3,187 children were the submaxillary glands found to be enlarged.

The cervical glands were found to be enlarged in 101 out of 3,187 children or in 3·1 % of those examined. There were differences in the degree of prevalence of enlargement at the different age periods. For example, 4·6 % of the children of 5 years of age showed enlargement, 3·0 % of the children at 9 years of age, and 1·4 % of those at 13 years of age.

This classification does not include Tuberculous conditions.

DEFECTIVE HEARING.

	13 years of age.		9 years of age.		5 years of age.		Admissions.		Total.	
	No. Def.	Per cent.	No. Def.	Per cent.	No. Def.	Per cent.	No. Def.	Per cent.	No. Def.	Per cent.
Male ..	13	5	28	5·1	5	1·1	18	3 7	46	2 8
Female	19	7·6	30	5·2	6	1·4	14	3·9	55	3·4
Total	32	6·3	58	5·1	11	1·2	27	3·8	101	3·1

Defects of hearing were therefore rather more frequent amongst females than amongst males, and most frequent at the higher ages. The percentage given for the 5 years old children is a pure approximation, as the determination of hearing at that age is extremely difficult, at least under the conditions of a school examination.

SPEECH.

	13 years of age.					9 years of age.					5 years of age.					Admissions.					All Ages.				
	STAMMER.	LISP.	OTHERS.	TOTAL.	PER CENT.	STAMMER.	LISP.	OTHERS.	TOTAL.	PER CENT.	STAMMER.	LISP.	OTHERS.	TOTAL.	PER CENT.	STAMMER.	LISP.	OTHERS.	TOTAL.	PER CENT.	STAMMER.	LISP.	OTHERS.	TOTAL.	PER CENT.
Male ..	4	2	2	8	3·9	3	5	..	8	1·4	..	1	2	3	·6	2	4	..	6	1·7	9	12	4	25	1·5
Female	1	..	..	1	·4	..	6	..	6	1·0	1	1	..	2	·5	1	..	1	2	·7	3	7	1	11	0·6
Total	5	2	2	9	1·7	3	11	..	14	1·2	1	2	2	5	·5	3	4	1	8	1·1	12	19	5	36	1·1

It is evident that defects of speech were much more numerous amongst boys, and that the tendency to defect increased with the age. The difference between the males and females at 13 years of age is very marked.

EYES.

(Contributed by Dr. Johnston).

The examination of the acuity of vision as carried out in the schools is, at best, unsatisfactory. If more scientific methods were possible of adoption, the percentage of defects would undoubtedly be higher That defective vision is a serious handicap in the struggle for existence, no one will deny, nor that it places a child at a great disadvantage in obtaining full advantage from the educational facilities offered. The continued struggle to see clearly involves a mental effort which diminishes the power of concentration with consequent inattention. The child very soon gets tired, and is then unable to fix its attention, with the result that full benefit from the lesson is not obtained. The defective error may vary from an inability to accommodate the eye for near vision for any reasonable length of time to a total inability to see the blackboard unless placed in the very front of the board.

There is no doubt that defective vision is more prevalent at the present time than formerly, but the increase is to a certain extent only apparent. By our modern system of education we have enormously increased the work done by the eye, and combined with that, we have the congregating of large numbers of people in the towns, with consequent physical deterioration, and a largely restricted use for distant vision. Not only, therefore, does the eye do more work, but it does it under very unfavourable circumstances, so that any latent defect is more *readily developed.* The most important factor in preventing undue eye strain is suitable lighting accommodation, both in regard to quantity and direction.

To determine the part that defective lighting plays in developing and exaggerating pre-existing ocular defects, the schools have been classified as under :—

(*a*) Schools where the quantity and the direction of the lighting is satisfactory.

(*b*) Schools where the quantity and (or) the direction of the lighting is unsatisfactory.

(*c*) Schools where the quantity and (or) the direction of the lighting is distinctly unsatisfactory.

(*d*) Schools where the quantity and the direction of the lighting is very unsatisfactory.

In schools classified under A the percentage of defect was 10·2
,, ,, ,, ,, B ,, ,, ,, ,, 12·3
,, ,, ,, ,, C ,, ,, ,, ,, 18·9
,, ,, ,, ,, D ,, ,, ,, 23·5

The percentage variated from a minimum of 6·8 to a maximum of 30. A few of the schools are not included in the above as the number of examinations was small. It must also be pointed out that the figures, though strictly accurate, are not based on a sufficiently large number of cases to warrant definite conclusions. The broad fact remains, viz, that the percentages of visual defect increases with the degree of defective lighting.

	13 Years.			9 Years.		
	No. Examined.	No. Defective.	Percentage.	No. Examined.	No. Defective.	Percentage.
Males ..	257	49	19·1	542	63	11·6
Females ..	250	58	23·2	570	83	14·5
Total ..	507	107	21·1	1112	146	13·0

The above Table shows that 21% of children, at the age of 13, suffered from a refractive error or errors, and 13% of children at the age of 9. The difference of 8% may be taken to represent the number of children who are able to pass the ordinary test at the age of 9, but fail to do so at the later age, because the defect goes on increasing until it can no longer be overlooked.

At both age periods the percentage is higher among girls than boys.

Taking 1400 as the average number of children at each age period, it will be seen that there are at least 476 children who annually require to undergo a more detailed examination, in order that the exact error may be discovered, and corrected by suitable glasses, if found necessary.

Each eye was examined separately, and it was found that a refractive error was present in the right eye only in 2·8% of cases at all ages, in the left eye only in 4·2% of cases, and, in both eyes, 10% of cases.

The following Table shows the degree of prevalence of External Diseases of the Eye, classified according as the diseased condition was located on the lids or conjunctiva.

EXTERNAL DISEASES OF THE EYE.

	13 Years.				9 Years.				5 Years.				Admissions.				All Ages.			
	Lids.	Conjunctiva.	Total.	% of External Eye Diseases	Lids.	Conjunctiva.	Total.	% of External Eye Diseases	Lids.	Conjunctiva.	Total.	% of External Eye Diseases	Lids.	Conjunctiva.	Total.	% of External Eye Diseases	Lids.	Conjunctiva.	Total.	% of External Eye Diseases
Males ..	3	1	4	1·2	16	2	18	3·3	4	...	4	0·9	5	3	8	2·2	28	6	34	2·1
Females ..	7	2	9	3·6	17	3	20	3·5	8	...	8	1·9	12	4	16	4·5	44	9	53	3·3
Total ..	10	3	13	2·4	33	5	38	3·4	12	...	12	1·4	17	7	24	3·4	72	15	87	2·7

TONSILS AND ADENOIDS.

The following Table shows the degree of prevalence of Pathological conditions of the Tonsils and Adenoid tissues at the back of the throat.

	TONSILS.								ADENOIDS.							
	Normal.		Slight Hypertrophy.		Medium Hypertrophy.		Marked Hypertrophy		Absent.		Slight.		Medium.		Bad.	
Age Period, 13 Years.																
Male ..	174	67·7	58	22·6	21	8·1	4	1·6	234	91·0	12	4·7	5	1·9	6	2·3
Female ..	174	69·6	50	20·0	17	6·8	9	3·6	221	88·4	14	5·6	12	4·8	3	1·2
Total ..	348	68·6	108	21·4	38	7·4	13	2·6	455	89·7	26	5·2	17	3·3	9	1·8
Age Period, 9 Years.																
Male ..	311	57·4	153	28·2	58	10·7	20	3·7	483	89·1	26	4·8	20	3·7	13	2·4
Female ..	355	62·3	146	25·6	53	9·3	16	2 8	507	89·0	34	6.0	20	3·5	9	1·5
Total ..	666	59·8	299	26·9	111	10·0	36	3 3	990	89·0	60	5·4	40	3 6	22	2·0
Age Period, 5 Years.																
Male ..	266	59·2	122	27 2	54	12·0	7	1·6	400	89·1	23	5·1	19	4·2	7	1 6
Female ..	279	67·5	83	20·1	40	9·7	11	2·7	370	89:6	14	3·4	20	4·8	9	2·2
Total ..	545	63·4	205	23·6	94	10·8	18	2 2	770	89·3	37	4·3	39	4·5	16	1·9
Admissions.																
Male ..	194	55·1	109	30·9	32	9·9	17	4·1	306	87·0	20	5·6	19	5·4	7	1·9
Female ..	236	66·6	70	19·7	38	10·7	10	3·0	321	90·0	14	3·9	12	3·3	7	1·9
Total ..	430	60·9	179	25·3	70	9·9	27	3·8	627	88·8	34	4·8	31	4·3	14	1·9
Total, all Groups.																
Male ..	945	58·7	442	27·6	165	10·3	48	3·0	1423	88·9	81	5·1	63	3·9	33	2·0
Female ..	1044	65·7	349	21·9	148	9·3	46	2·9	1419	89·4	76	4·7	64	4·0	28	1·7
Total ..	1989	62·4	791	24·8	313	9 8	94	2·9	2842	89·1	157	4 9	127	3·9	61	1·9

MENTAL CONDITION.

The information obtained in the ordinary Medical Inspection does not enable one to arrive at an accurate estimate of the number of children attending school who are, on account of some mental condition, unable to derive the full benefit from the ordinary school curriculum. It has therefore been decided to hold a special enquiry into the subject, which will form the basis of a special report.

The scope of the enquiry is as follows :—

(1) The detection of epileptics.

(2) The discovery of children who are mentally *quite unable* to benefit by the ordinary school course.

(3) The discovery of children who are *unable to derive full benefit* from the educational facilities provided, either from Mental insufficiency or physical unfitness.

NERVOUS SYSTEM.

Pathological conditions of the Nervous System were few and far between amongst children. Only three cases of chorea were discovered amongst 3,187 children. No other pathological conditions of the nervous system were found.

CIRCULATORY SYSTEM.

Pathological conditions of the Circulatory System were quite rare. Out of the total number of children examined, only 12 were found to be suffering from heart or other diseases of the circulatory system.

RESPIRATORY SYSTEM.

Marked pathological conditions of the Respiratory System were not common. In 26 instances conditions of bronchial catarrh or other pathological condition sufficiently marked to be notable were discovered. Slight conditions of bronchial catarrh, especially amongst the younger children in the winter months, are extremely common.

TUBERCULOUS DISEASES.

The following is a brief summary of the Tuberculous conditions found.

Amongst children at 13 years of age, one male and two females were suffering from phthisis.

At 9 years of age, seven males and four females were suffering from phthisis, and one female from glandular tuberculosis.

At 5 years, two males were suffering from phthisis, and one male and one female from glandular conditions.

Amongst the admissions three males and one female were suffering from phthisis.

Thus amongst the total number of children examined, 20 were suffering from phthisis, of whom 13 were males and 7 females. Phthisis was thus present in 0·61 % of the children examined.

There were three cases of glandular tuberculosis, of whom one was a male and two were females.

In addition to the phthisis cases discovered at the ordinary routine inspections, 17 additional cases were found as a result of special examination.

There were thus 37 cases of phthisis discovered amongst the school children during the year. Including the 24 cases of phthisis discovered last year, there are at present 61 known cases of suspicious and undoubted phthisis amongst the school children of the Borough. This is equal to 0·5 % of the children attending the Public Elementary Schools. There is reason to believe that this figure is too low.

It is an interesting fact that the death-rate from phthisis at the school age has, over a period of 20 years, averaged 0·5 per 1000 living.

DEFORMITIES.

The following Table shows the deformities discovered :—

	Chest.	Spine.	Extremities.	All others.	Total.
Male ...	19	1	3	10	33
Female ...	6	1	3	17	28
Total ...	26	2	6	27	61

These represent definite deformities. Slight variations from the normal are not included.

SKIN DISEASES.

The following Table gives the number of children excluded from school suffering from Skin Diseases. The large proportion of infants suffering from Ringworm as compared with boys and girls is very conspicuous. The same applies to Impetigo and Scabies. It is to be noted that it was unnecessary to exclude any boys from school on account of Pediculosis, but that the girls and infants supplied the whole of the exclusions. In all cases excluded from school for Pediculosis the degree of the condition was severe.

	Ringworm.	Impetigo.	Scabies.	Pediculosis.	Total.
Boys ...	44	13	10	—	67
Girls ...	43	15	9	106	173
Infants ...	149	49	15	77	290
Totals ...	236	77	34	183	530

The subject of Peticulosis received special consideration during the year, and, as a result, a special inquiry was conducted, involving the examination of 3281 girls and 1462 infants, a total of 4743 children. Two months afterwards the whole of those children were re-examined, with the result exhibited in the following Table. The result is a striking tribute to the effects of the examination, as the percentage of children found to be suffering from nits not only shows a remarkable diminution, but even, in the case of those still showing nits, the improvement is very marked.

	1st Examination.		2nd Examination.		Total Number of Children Examined.	
School.	Girls.	Infants.	Girls.	Infants.	Girls.	Infants.
Argyle Street ...	17·3	12·2	8·7	7·1	381	180
Britannia Road ...	24·4	33 3	3·1	12·5	127	72
Bramford Road ...	45·5	34·0	6·2	8·0	193	88
Clifford Road ...	20·5	15·0	4·8	5·0	355	140
London Road ...	40·5	21·6	11·9	13·3	185	60
Ranelagh Road ...	24·7	25·0	10·0	17·8	109	28
Rose Hill ...	17·3	14·8	3·7	8·3	317	108
Springfield ...	21·4	29·6	5·4	6·5	294	107
St. John's ..	15·5	16·1	4·2	1·4	141	149
St.Mary's, Albion Hill	14·4	14·9	7·0	5.9	99	67
St. Margaret's ...	30·0	34·7	12·7	6·7	133	46
St. Mary Stoke ...	10·5	8·0	5·7	6·5	142	75
St. Clement's and St. Helen's	—	21·9	—	3·5	—	85
St. Pancras ...	18·3	—	11·6	—	60	—
St. Peter's ...	28·6	13·3	11·8	5·0	143	60
Trinity Street ...	46·2	29·8	15·0	19·6	283	87
Wherstead Road ...	31·3	19·8	12·4	8 3	281	108
Whitton ...	42·1	—	21·0	—	38	—
					3281	1462
Averages ...	26·4	21·5	9·1	8·4		
					4743	

In all schools before Medical Inspection was begun, in the case of girls 50·1 %, and in the case of infants 27·1 %, showed the presence of nits.

The following Table shows the schools at which children suffering from various contagious skin diseases were in attendance, and the number suffering from each disease in each school.

All the cases included in this Table were excluded from school for varying periods.

It is evident that these diseases, which are preventable conditions, are a source of great loss in the grants earned by each school.

With particular reference to Ringworm, it is to be noted that there is great difficulty in obtaining medical treatment, many cases being treated by unskilled individuals, and cases occasionally returning to school still in an infectious condition.

It may be at once stated that there is one proof of the absolute cure of Ringworm, and one only, and that is the failure to discover any diseased hairs showing the parasite of the disease on microscopical examination. This difficulty is not a mere question of the unskilled but also extends to members of the medical profession, who occasionally state that a child may return to school on the grounds of a cure having taken place, when microscopical examination shows that the parasite of the disease is still present, and therefore the child is in a condition unfit to return to school.

School.	Ringworm.	Impetigo.	Scabies.	Pediculosis	Total.
Springfield ...	19	6	—	18	43
London Road ...	13	6	2	22	43
St. Matthew's ...	4	—	1	1	6
St. Mary Elms ...	6	2	1	—	9
Wherstead Road ...	21	5	8	11	45
Ranelagh Road ...	15	1	—	9	25
St. Peter's ...	11	7	—	17	35
St. Mary's, Albion Hill	10	—	—	8	18
St. Mary Stoke (B. & G.)	—	—	1	1	2
,, (Infants)	7	—	—	3	10
Bramford Road ...	14	3	5	19	41
St. Clement's and St. Helen's ...	5	3	2	4	14
Clifford Road ...	13	8	2	20	43
Argyle Street ...	39	14	3	16	72
St. Margaret's (Boys)	8	3	3	—	14
,, (Girls & Infants)	16	11	1	8	36
Central	4	—	—	2	6
Foundation ...	—	—	2	—	2
St. John's	6	—	—	2	8
Cavendish	1	1	—	—	2
California	—	—	—	—	—
Trinity Street ..	—	3	1	6	10
Nacton Road ...	3	—	—	—	3
Britannia Road ...	5	—	1	12	18
Rose Hill ...	12	1	—	4	17
St. Pancras ...	3	1	1	—	5
Whitton	—	1	—	—	1
Westerfield ...	1	1	—	—	2
Totals ...	236	77	34	183	530

EXCLUSIONS.

The following Table shows the number of children excluded from school for all causes during the year. Many of these were excluded in the ordinary course of medical inspection, or were brought to the notice of the Inspector during the course of inspection at the schools, or were sent to the office of the Medical Officer of Health by the teachers for special reasons, and were examined by the Inspector and excluded by him.

It is worthy of note that one case of Scarlet Fever was found in school, and that it did not give rise to any further cases.

Ringworm	236	Ext. Eye Disease	11	Pertussis	5
Impetigo	77	Debility	19	Scarlet Fever	1
*Pediculosis	183	Chorea	11	Denticular Abscess	4
Eczema	19	Tonsilitis	14	Epilepsy	3
Scabies	34	Glands	3	Miscellaneous	36
Phthisis	37	Anæmia	3		
Bronchitis	8	Chicken Pox	14		——
Otorrhœa	19	Mumps	3	Total	740

*These cases of Pediculosis were so severe as to require exclusion from school.

SCHOOL NURSE.

Experience has shown that the work of the School Nurse in the Medical Inspection of School Children is of essential value to the scheme.

In addition to her work in the school, the School Nurse has paid 1,980 visits to 1,450 homes in connection with various procedures.

740 children were excluded from school for various reasons, such as Ringworm, Scabies, etc Of these 645 were visited at home by the Nurse, the total number of visits being 1,196.

In addition to these, 646 children were recommended treatment of various kinds. Of these, 413 were visited in their homes, the total number of visits being 461.

323 cases of Measles were notified during the year from certain of the schools. To these children 323 visits were paid for the purpose of carrying out the regulations with regard to the exclusion from, or admission to, school, of contacts.

The School Nurse, in addition, was largely instrumental in securing the diminution in the pediculosis cases, and it may be stated that without her work, the results in this particular branch of work would have fallen far short of those actually obtained. I do not regard the action of the Nurse in visiting pediculosis cases and showing parents how such cases should be treated, and (in cases where permission is granted), cutting the hair, as treatment.

The results of medical inspection so far are satisfactory, but it is clear that we are only at the beginning of the subject. Experience has shown that there are many children in attendance at school who labour under disadvantages of which their parents are quite unconscious. In many of these cases inspection has been the means of securing the requisite treatment with the best results to the child, and there can be no doubt that as time goes on the general public will more and more realise the value of inspection with corresponding advantage to the children.

At the present time, although much of the procedure has been shown by experience to be satisfactory, it is equally evident that there are many directions in which improvement can be secured.

I direct special attention to the inestimable value of special investigations into special conditions, as I am convinced that the full benefits of Medical Inspection will not be realised as a result of routine inspection pure and simple.

The vast majority of the children excluded from school were treated for the diseases for which they were excluded. In Ipswich there is not an insuperable difficulty to the securing of treatment either by private practitioners or by the Poor Law Medical Sciance, or at the East Suffolk Hospital. A difficulty has arisen in the case of eyes, but it has been surmounted at the present time.

VENTILATION.

During a period extending over 14 months the air in the classrooms of the various schools has been examined by Dr. Johnston, with the view of determining the efficiency of the ventilation. The figures represent volumes of Carbon-di-Oxide per 1000. The percentage of Carbon-di-Oxide present is taken as the "Standard of Impurity."

The amount of Carbon-di-Oxide found in outside air, under ordinary atmospheric conditions is about 0·4 per 1000, and in addition, it is usual to allow 0·2 per 1000 of "permissible impurity." Anything above 0·6 must be regarded as unsatisfactory, but this ideal is not often attained. Where *through ventilation* was in use the air invariably showed a higher standard of purity. During the summer months it was found that, in the absence of through ventilation, the air showed a high degree of impurity, although all the windows were wide open. This is due to the more or less stagnant condition of the air in hot, dry weather. The lesson to be learnt from this is that *through ventilation should be insisted upon*, and all windows made to open to their utmost capacity. This would make possible efficient ventilation under the most varying atmospheric conditions.

The following Table gives the maximum and minimum observations for each school examined, together with the average of all the examinations :—

School.	Boys.			Girls.			Infants.			No.
	Max.	Min.	Av.	Max.	Min.	Av.	Max.	Min.	Av.	
Argyle Street ...	—	—	—	1·9	1·0	1·4	1·4	0·7	1·1	10
Britannia Road	1·3	0·5	1·0	—	—	—	1·3	0·5	0·94	12
Bramford Road	1·4	0·8	1·0	1·8	0·9	1·3	4·0	1·5	2·7	12
Cavendish Street	1·4	1·2	1·2	—	—	—	—	—	—	5
California ...	1·3	0·8	1·04	—	—	—	—	—	—	5
Central ..	2·1	0·6	1·2	2·3	1·3	1·7	—	—	—	13
Clifford Road ...	1·5	0·8	1·3	2·1	0·4	1·4	2·0	0·6	1·1	18
Foundation St.	1·9	0·8	1·2	—	—	—	—	—	—	3
London Road ...	—	—	—	1·5	0·6	1·05	1·8	0·6	1·1	10
Nacton Road ...	1·8	1·1	1·4	—	—	—	—	—	—	7
Ranelagh Road	1·3	0·6	0·8	1·0	0·7	0·85	1·7	1·0	1·3	12
St. Matthew's ...	1·0	0·8	0·9	1·0	1·0	1·0	0·9	0·8	0·8	8
St. Mary Elms	1·0	0·8	0·9	—	—	—	—	—	—	4
St. Mary's, Albion Hill ...	1·1	0·9	1·0	—	—	—	1·6	0·6	0·9	6
St. Margaret's ...	1·2	0·7	0·9	3·0	1·5	2·06	2·4	1·0	1·7	15
St. Mary Stoke	1·7	1·1	1·3	1·8	1·3	1·5	1·3	1·1	1·1	9
St. Clement's & St. Helen's ...	—	—	—	—	—	—	1·4	0·6	0·87	4
St. Pancras ...	1·5	0·6	1·0	—	—	—	—	—	—	3
St. Peter's ...	1·0	0·9	0·96	1·0	1·0	1·0	1·3	0·6	0·9	8
St. John's ...	—	—	—	1·5	0·6	1·04	1·5	0·6	0·83	11
Springfield Road	1·3	0·9	1·2	1·6	1·4	1·5	1·7	0·9	1·2	10
Rose Hill ...	—	—	—	2·2	0·9	1·4	1·4	0·5	0·8	15
Trinity ...	—	—	—	1·4	0·4	0·83	1·4	1·05	1·23	11
Wherstead Road	1·7	0·6	1·1	2·2	0·8	1·5	2·5	0·5	1·2	21
										232

I have to thank the Assistant Medical Officer of Health (Dr. D. J. G. Johnston) for the manner in which he has carried out the work of routine medical inspection in the schools, and for the valuable work which he has carried out in connection with special examinations.

I have also to thank him for valuable assistance in the preparation of that portion of this Report which deals with the Medical Inspection of School Children.